A Dissertation on

RISK FACTORS ASSOCIATED WITH IN-HOSPITAL MORTALITY RELATED TO CIRRHOSIS OF LIVER

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CERTIFICATE

This is to certify that this dissertation entitled "RISK FACTORS ASSOCIATED WITH IN HOSPITAL MORTALITY RELATED TO CIRRHOSIS LIVER" is a bonafide work done by DR. K.Sridhar during the study period 2008-2011 and is being submitted to The Tamil Nadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the requirements for the award of DM Branch IV Medical Gastroenterology Degree.

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DECLARATION

I declare that this dissertation entitled "RISK FACTORS ASSOCIATED WITH IN HOSPITAL MORTALITY RELATED TO CIRRHOSIS LIVER" has been done by me under the guidance and supervision of Prof.A.R.Venkateswaran, MD, DM. It is submitted in partial fulfillment of the requirements for the award of DM Gastroenterology degree by The Tamilnadu Dr. M.G.R. Medical University, Chennai. This has not been submitted by me for the award of any degree or diploma from any other University.

Dr. K. Sridhar

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Contents

Introduction

Introduction

Once patients with cirrhosis experience decompensation, mortality risk increases.

The causes of mortality in decompensated cirrhosis patients are many fold. Both hepatic dysfunction and non hepatic causes have been implicated in causation of death in decompensated cirrhotic patients

Not all patients admitted with decompensated cirrhosis deteriorate. Many improve with intensive treatment and are discharged. However some patients deteriorate in spite of intensive treatment and die.

The short-term prognosis of acutely ill patients with cirrhosis is influenced by the degree of hepatic insufficiency and by dysfunction of extrahepatic organ systems

Child-Pugh score has been the reference for many years for assessing the prognosis of cirrhosis. However, Child-Pugh score has important limitations, making it difficult to categorize patients according to their own disease severity. The model for end-stage liver disease (MELD) score, which was originally designed for

assessing the prognosis of cirrhotic patients undergoing transjugular intrahepatic portosystemic shunt (TIPS), is a continuous score relying on three objective variables.

However both CTP score and MELD are associated with many limitations. Mainly they are not used used in assessing prognosis during hospitalization. Many other biochemical and hematological variables can be associated with mortality and can be predictive.

Assessment of prognosis during hospitalization mortality can have important role in **triaging** for level of care

Aim Of The Study

Aim of the study

1. To find out the causes of hospital mortality in patients admitted with decompensated cirrhosis of liver
2. To evaluate for the biochemical and hematological parameters that are related to mortality during hospitalization

Review of literature

Review of literature

Cirrhosis – Natural history

Any patient with cirrhosis carries a risk of specific life-threatening complications such as variceal bleeding, sepsis, or hepatorenal syndrome. There is in addition a significant risk of nonspecific life-threatening complications due to the association of frequent comorbidities. The course of the disease is characterized by a long standing phase of compensated cirrhosis, followed by the occurrence of specific complications. It has been shown that after 10 years of diagnosis, the probability of developing decompensated cirrhosis is around 60%, ascites being the most common complication (~50%).[1] Once patients have developed the first evidence of decompensation, complications tend to accumulate and life expectancy is reduced markedly.

The course of cirrhosis varies extremely from patient to patient due to several factors, including hepatic synthetic function (or "hepatic reserve"), the cause of cirrhosis, the possibility of stopping or slowing the underlying damaging process to the liver, and the occurrence of liver malignancy. Therefore, establishing a

prognosis in a given patient with cirrhosis remains a challenging issue. In addition to the estimation of life expectancy, more complex issues must be taken into account, such as the capacity of a cirrhotic patient to withstand a given therapeutic intervention. Over the last decade, complex issues emerged with the availability of liver transplantation, namely, the optimal timing for transplantation and, on a collectivity basis, the optimization of allocation policy in a context of organ shortage.

Even though the course of cirrhosis varies according to several factors, the need for prognostic models and scoring systems is obvious in order to manage individuals faced with different therapeutic options

Child's Score

Child's score, originally termed Child-Turcotte score, was proposed more than 30 years ago.[3] It was initially designed for predicting the outcome after surgery for portal hypertension (portocaval shunting and trans-section of the esophagus) in patients with cirrhosis. Child-Turcotte score had included two continuous variables (bilirubin and albumin) and three discrete variables (ascites, encephalopathy, and

nutritional status) which were selected empirically because they were felt to have their own influence on the prognosis.[4]

A modified version was proposed ~20 years ago termed Child-Pugh score .[5] The change in this modified version was that nutritional status was replaced by prothrombin time. Initially, prothrombin time was expressed in seconds. However, a limitation is the fact that prothrombin can also be expressed as either a percentage of normal (prothrombin index) or as international normalized ratio (INR), this latter being now the reference in many countries. The original cut-off values was 4 and 6 seconds for prothrombin time prolongation correspond approximately to a prothrombin index of 50% and 40%, respectively. These same values correspond roughly to an INR of 1.7 and 2, respectively. Child-Pugh score corresponds to the total points for each item. According to the sum of these points, patients can be categorized into different Child-Pugh grades A (5 to 6 points), B (7 to 9 points), or C (10 to 15 points). The variables that are included in Child-Pugh score are not specific markers of the synthesis (albumin and prothrombin) and elimination (bilirubin) functions of the liver. Changes in serum albumin may be also related to increased vascular permeability,[6] especially in cases of sepsis, and large-volume ascites.[7] Similarly, increased bilirubin can be a consequence of impaired renal function, hemolysis, or sepsis.[8] Prolonged prothrombin time can be

a consequence of an intravascular activation of coagulation factors during sepsis.[9] Overall, the individual components of the Child-Pugh score encompass a very broad spectrum of conditions than the single impairment of "liver function." Child-Pugh score as a whole can also be considered a marker of the multiorgan changes resulting from cirrhosis.

Child Score

Measure	**one**	**Two**	**three**
Bilirubin (mg/dl)	<2	2-3	>3
Albumin (g/dl)	>3.5	2.8 – 3.5	<2.8
INR	<1.7	1.71 – 2.20	>2.20
Ascites	None	Mild	Severe
Encephalopathy	None	Grade I-II (or suppressed with medication)	Grade III-IV (or refractory)

Assessment of prognosis by Child Pugh score

Points	Class	One year survival	Two year survival
5 – 6	A	100%	85%
7 – 9	B	81%	57%
>10	C	45%	35%

Applications

Studies shown that Child-Pugh score is an independent prognostic marker in the settings of ascites,[10] ruptured esophageal varices,[11] alcoholic cirrhosis,[12] hepatitis C virus- (HCV-) related cirrhosis,[13] primary biliary cirrhosis (PBC),[14] primary sclerosing cholangitis (PSC),[15] and Budd-Chiari syndrome.[16] Child-Pugh score, can be easily calculated at the bedside and has been widely used for selecting candidates for resection of hepato cellular carcinoma[17] and nonhepatic surgery.[18]

Limitations

The five variables of Child-Pugh score were selected empirically. It can be anticipated that not all are independent predictors of prognosis. For example, albumin and prothrombin time may be somewhat redundant. Including both

variables in a single score may result in overweighting their own influence on this score.

The cut-off value for each variable has also been empirically selected. There is no evidence that moving from one class to the next one translates into a proportional increased change in mortality risk. For example, patients with serum bilirubin above 6 mg% may be under-scored with Child-Pugh, because the limit for the upper class of bilirubin is only 3 mg%. In addition, the limits for qualitative variables like ascites and encephalopathy are still vague and can be influenced by subjective interpretation.

The five variables of Child-Pugh score are also empirically given the same weight, which is also questionable. Multivariate analysis has also shown that the proper weight of predictive factors is quite variable. Taking an example, the weight of INR is three times as high as that of bilirubin in MELD score.[24]

Child-Pugh score also does not take into account specific variables, serum creatinine in particular, which had been shown to have a determinant impact on the prognosis of cirrhosis.[10,24] Similarly, it has been shown that the addition of other markers like markers of portal hypertension, such as esophageal varices, portal

blood velocity, and hepatic venous pressure gradient (HVPG), would improve the accuracy of Child-Pugh score.[20,25,26]

Finally, Child-Pugh score does not take into account the etiology of cirrhosis and the possibility of stopping the damaging process to the liver. This limitation is especially relevant in patients with ethanol related cirrhosis or with hepatitis B virus- (HBV-) related cirrhosis with viral replication.

Meld Score

Definitions

Child score was originally designed for assessing the prognosis of cirrhotic patients undergoing surgical treatment of portal hypertension. MELD score was designed for assessing the prognosis of cirrhotic patients undergoing transjugular portosystemic intrahepatic shunt (TIPS).[24] Multivariate analysis using Cox regression analysis showed that among a list of various pre-determined variables, four variables had an independent impact on survival, namely bilirubin, creatinine, INR, and the cause of cirrhosis (alcoholic and cholestatic versus other causes). To lessen the influence of extreme values, the natural logarithm of bilirubin, INR and

creatinine were entered into the model. Based on logistic regression analysis, a coefficient was attached to each variable, according to the weight of each variable on mortality risk. In the original series, the resulting score was more accurate than Child-Pugh score for predicting survival after TIPS.

With the availability of liver transplantation, attention moved from the management of portal hypertension to waiting list mortality and organ allocation policy in patients listed for transplantation. Therefore, a slightly modified risk score, termed the MELD score, was tested in populations of cirrhotic patients for assessing early (3 months) mortality risk after placement on the waiting list.[28] This modified score was proved to be a robust marker of early mortality which could be generalized to patients with various etiologies of cirrhosis and various degrees of severity. As excluding the variable "cause of cirrhosis" had a minimal impact on the model accuracy, a simplified version of MELD score including three objective variables (bilirubin, creatinine, and INR) was eventually proposed for easier use [29] According to this modified score, patients with bilirubin and creatinine values below 1 mg/dL are rounded off to 1 mg/dL to avoid negative logarithmic values. Likewise patients with INR below 1 are rounded off to 1. Whatever the individual values, the score is empirically capped at a value of 40. Therefore, MELD score represents a continuous variable ranging from 6 to 40.

Applications

MELD score has been adopted from 2002 for organ allocation to patients listed for liver transplantation [30]. According to the MELD-based policy, patients with the highest score of MELD have a priority for organ allocation. MELD score has also been adopted in several European countries as well as in South America.

In addition to organ allocation, several studies have also confirmed that MELD score is a reliable tool for predicting outcome after TIPS.[31,32] The "c" statistic of an event represents a global estimate of the ability of a score to predict an event. This statistic is derived from the area under the receiver operating characteristic curve and ranges from 0 to 1. A "c" statistic of 0.5 means that the score is not of value for predicting a given event. A "c" statistic of 1 means that the score is perfect and best predicts a given event (a goal which is rarely achieved in clinical practice). The "c" statistic of the MELD score for predicting 1-year survival after TIPS is around 0.7, which means that it is clinically useful. MELD score has also proved to be a reliable marker of 1-year and 5-year survival across a broad spectrum of liver diseases including alcoholic cirrhosis and alcoholic hepatitis.[33] In addition, MELD score has also been shown to be a good prognostic marker in cases of variceal bleeding,[34] spontaneous bacterial peritonitis,[35] and hepatorenal

syndrome.[36] Independent of the cause of cirrhosis, high MELD score was shown to be associated with a decrease in residual liver function as measured by functional liver function tests.[37]

Limitations

All the variables entered in the MELD model have been empirically selected, because they were felt to have an influence on the outcome or, more simply, because they were available.

The three variables entered in the MELD score (bilirubin, creatinine, and INR) are objective variables (in contrast to ascites and encephalopathy, the grading of which is subjective). For example there are substantial inter laboratory variations in INR depending on the methods used for determination. Among all the three variables of MELD score, INR has the highest multiplicative value. Therefore the variations in INR may translate in up to 20% differences in MELD score.[38] In individuals with cirrhosis, substantial changes in serum creatinine may occur, especially in those undergoing large-volume paracentesis and/or receiving diuretics. There is a poor agreement among different creatinine assays, especially with serum bilirubin rising.[39] Overall, MELD score was not as objective as it was expected to be.

A major limitation of MELD is the need for computation, which makes it less friendly to use than Child-Pugh score at the bedside. The logarithmic transformation has been chosen to optimize the statistical model. Originally, this model and the derived score were not designed to be routinely used in clinical practice. With the expansion of use of MELD score in many fields of hepatology, the need for computation represents a source of difficulties. In addition, there are also no clear-cut values of MELD score for easily categorizing individual patients according to their own mortality risk.

Meld Score Derivatives

MELD-Na

With the implementation of the MELD score, refractory ascites was removed from the list of variables used for assessing the prognosis of cirrhosis. Ascites was shown to be associated with poor prognosis.[40] It was felt that in patients with refractory ascites, normal creatinine, and preserved hepatic function, MELD could be under-scored. It was shown that persistent ascites and low serum sodium

identified a subset of patients with relatively low MELD score (below 21) and a high risk of early death.[41]

Serum sodium is a very simple, readily available, and objective marker of disease severity. During cirrhosis, hyponatremia results from various causes including solute-free water retention. Systemic arterial vasodilation leads to the release of antidiuretic hormone which, in turn, induces dilutional hyponatremia. The activation of these mechanisms in turn correlates with the degree of portal hypertension.[42] Hyponatremia can be considered to be indirect marker of portal hypertension during cirrhosis.

Various studies have shown that hyponatremia is a strong predictor of early mortality, independent of MELD score.[41,43-45] Changes in survival are especially pronounced for sodium concentrations from 120 to 135 mEq/L. Within this sodium range, a decrease in serum sodium of 1 mEq/L corresponds to a 12% decrease in 3-month probability of survival.[45] A modified score including serum sodium, termed **MELD-Na,** has been proposed as an alternative to MELD score for assessing prognosis.[44] The accuracy of MELD-Na was shown to be only slightly superior to that of MELD in candidates for transplantation.[43-45] The effect

of hyponatremia was found to be higher in patients with low MELD score compared with those with high MELD score.

A limitation for the incorporation of serum sodium into MELD is that during cirrhosis, marked changes in serum sodium concentration can result from several factors, including the administration of diuretics and intravenous hypotonic fluids. For example, the administration of diuretics leads to a 4 mEq/L decrease in serum sodium, on average.[46] In some patients the decrease may reach up to 10 mEq/L. In contrast to diuretics, the use of V2-receptor antagonists for treating refractory ascites is encouraging. These agents would induce a significant increase in serum sodium. Therefore, serum sodium is not as objective as it was thought to be. Further validation and practical guidelines is needed regarding the incorporation of sodium to avoid misclassification.

MELD-XI

INR is the variable in MELD which has the highest weight in MELD score. Unfortunately, INR is not interpretable in patients receiving anticoagulation therapy. Patients with cirrhosis may receive anticoagulation due to portal vein thrombosis, an underlying prothrombotic state, or any other concomitant condition.[47] Most patients with Budd-Chiari syndrome may also receive

anticoagulation with anti-vitamin K agents. In this population also INR is artificially increased. Using MELD score in these contexts would result in overestimating the disease severity.

With the important aim of overcoming this difficulty, a modified MELD score termed MELD-XI (for MELD excluding INR) has been proposed.[48] This modified score significantly relies only on bilirubin and creatinine. Therefore, neither INR nor any other marker of coagulation is taken into account for calculating the score. The coefficients ascribed to creatinine and bilirubin during calculation of MELD have been changed to obtain the optimal linear correlation between MELD and MELD-XI. Therefore, the adjusted coefficients mean that patients with a given MELD-XI score have a mortality risk comparable to that of patients with interpretable INR and a similar MELD score.

The validation of MELD-XI score signifies that its accuracy for assessing 3-month mortality risk is comparable to that of MELD (with a c statistic of ~0.83).[48] Omission of INR and the use of adjusted coefficients did not change much the predictive accuracy of the score, which is somewhat surprising since INR is a strong, independent prognostic marker in the original series from which MELD score is derived. Noted that both creation and validation of MELD-XI score have

been made in populations of patients who did not receive anticoagulation. Patients who are receiving anticoagulation are expected to have co-morbidities and/or a different natural history. These patients may have specific risk profiles with a higher risk compared with patients without thrombotic complications. Therefore, further validation and studies in this particular population are needed.

Delta MELD

It can be anticipated that taking into account changes in MELD score over time may add prognostic information.[49] Patients who have a rapid increase in MELD over time might be expected to have a worse outcome than those with stable or even decreasing MELD score. Delta MELD is defined as the difference between current MELD and the lowest MELD measured within 30 days prior to current MELD. The Delta MELD was shown to be predictive of early mortality in patients with cirrhosis. However, delta MELD was not predictive of mortality when entered into a multivariate model with current MELD score.[50] These results suggest that

current MELD score is the only predictor of mortality regardless of how that score was reached.

Prognosis Related to Specific Causes of Cirrhosis

Alcoholic Cirrhosis and Alcoholic Hepatitis

A particularity of alcoholic cirrhosis is that the majority of patients with high disease severity indexes do have superimposed alcoholic hepatitis. Alcoholic hepatitis is a potentially reversible condition, which means that some of these patients are likely to improve within the first months following discontinuation of alcohol. Such patients may return to a state of compensated cirrhosis. Evidence has shown that corticosteroids improve short-term survival in patients with severe alcoholic hepatitis.[51] Therefore, it would be difficult to assess the prognosis of patients with alcoholic cirrhosis without taking into account the existence of alcoholic hepatitis and, in those with severe alcoholic hepatitis, response to steroids.

In most surveys, severe alcoholic hepatitis has been defined by a “discriminant function” above 32 .[52] In addition to this discriminant function, generally termed as “Maddrey score” (or Maddrey discriminant function), several specific scores have been created to predict early mortality in patients with severe alcoholic

hepatitis.[53,54] The more general MELD score has also been assessed in this setting. MELD score proved to be as efficacious as or even superior to the original Maddrey discriminant function.[55,56] However, none of these scores takes into account the progression over time and the response to steroids which, again, may be determinant.

HBV- and HCV-Related Cirrhosis

Recently, major advances have been achieved in the treatment of chronic HBV infection with the advent of antinucleot(s)ide analogues. Patients with decompensated HBV-related cirrhosis receiving antiviral therapy have a biphasic survival pattern. Mortality rate within the first 6 months after initiation of antiviral therapy is ~15%.[58] After the first 6 months, mortality rate is 10 times lower. In the subgroup of patients who survive more than 6 months, 3-year survival exceeds 85%. Compared with historical controls, patients with HBV-related decompensated cirrhosis receiving antinucleot(s)ide analogues have better survival rates. Based on a large cohort of patients with decompensated HBV-related cirrhosis receiving lamivudine, a specific prognostic score has been proposed . This score incorporates three variables: bilirubin, creatinine, and the presence of HBVDNA before treatment. It is somewhat paradoxical that patients with

undetectable HBV-DNA before initiation of antiviral therapy had a better survival. Indeed, it could have been expected that only those with evidence of viral replication (those who are positive for serum HBVDNA) would benefit from antiviral therapy. Other data suggest that 20% of patients initially considered for transplantation can eventually be removed from the waiting list after receiving adefovir-dipivoxil as a result of clinical improvement.[59]

Advances in the treatment of HCV infection have been more limited, although significant. In patients with HVC-related cirrhosis, sustained virological response to interferon was shown to improve long-term outcome by reducing the incidence of liver-related complications.[60] However, the combination of interferon and ribavirin is generally contraindicated in patients with decompen-sated cirrhosis. There is no specific model for predicting the outcome according to viral load, genotype, and response to therapy.

PBC

PBC is one of the causes of cirrhosis for which specific prognostic scores were first proposed.[61,62] The aim of scoring was to determine the optimal timing for transplantation. The Mayo risk score for PBC includes four objective variables and one subjective variable (i.e., edema). It has been shown that the probability of

survival without transplantation for a risk score of 7.8 is 63% and 39% at 1 and 2 years, respectively. It has also been shown that the risk of post-transplant mortality increases significantly when the risk score exceeds 7.8. Therefore, it is recommended that patients be referred to transplantation centers before reaching this value.

PSC

The course of PSC is much more variable than PBC. It has been shown that the specific risk score (termed Mayo risk score for PSC) is more accurate than Child-Pugh for predicting survival, especially in patients with less-advanced disease.[64] This score allows the identification of three groups at low (score < 0), intermediate ($0 \leq$ score > 2), or high (score ≥ 2) risk. Five-year survival is above 90% in patients at low risk while it is less than 40% in patients at high risk.

Prognosis in the Setting of the Intensive Medical Care Unit

In general, the prognosis of cirrhotic patients admitted to the intensive care unit (ICU) due to multiorgan failure is very poor. Mortality rates in patients with failure

of two or three organ systems are estimated to be around 75% and 95%, respectively.[69] Mortality is much higher than that of noncirrhotic patients with multiorgan failure. For example, mortality rate among noncirrhotic patients with failure of two or three organ systems in a context of severe sepsis is around 26% and 34%, respectively.[70] The poor outcome of cirrhotic patients with multiorgan failure results from a rapid alteration of liver function, a limited capacity for liver regeneration, and the absence of efficient artificial liver support systems. Predicting the outcome in this context may help optimize resource utilization and triage. However, it must be kept in mind that not all patients admitted to the ICU have a fatal outcome. In particular, some patients may be efficiently managed with aggressive management.

In the particular setting of IMCU, it was reasonably assumed that Child-Pugh and MELD score have significant limitations for predicting very short-term survival. The more general Acute Physiology and Chronic Health Evaluation (APACHE) II[71] and sequential organ failure assessment (SOFA) scores[72] have been extensively validated in ICU admitted patients. SOFA score is a relatively complex score based on respiration, coagulation, liver function, cardiovascular status, neurological status, and renal function parameters. In cirrhotic patients admitted to the ICU, the accuracy of SOFA score was shown to be superior to that of

APACHE II and Child-Pugh score with a c statistic of 0.94.[69] Although the assessment of MELD score has been limited in this context, it seems that its prognostic value is lower than that of general ICU scores.[73]

Overall, general ICU scores seem to be superior to "liver-oriented" prognostic scores in this context. In particular, whether multiorgan failure is the consequence of terminal illness alone or the consequence of one or more iatrogenic factors may weight heavily on the probability of recovery

Prognosis in the Particular Setting of Non transplant Surgery

Independent of liver resection for HCC, the possibility is relatively high that patients with cirrhosis will require some form of surgery (whether intra- or extra-abdominal) at some time. But, patients with cirrhosis also represent a population at high risk of surgical morbidity and mortality. Recent reports indicate that in this population, in-hospital mortality may be as high as 10 to 20%, even though it can be assumed that most patients were carefully selected.[65,66] Mortality is the result of a high rate of postoperative decompensation of cirrhosis (especially in cases of intra-abdominal surgery) and an increased risk of bacterial infections.

The issue of surgery and cirrhosis depends on presence of an alternative to surgery. When nonsurgical alternatives exist, prognostic markers should help justify the risk

of surgery. Child-Pugh score has been used in the last decade for addressing these issues. Recently, MELD score has also been assessed for predicting non-transplant surgical mortality.[65] In general, there is an approximately 1% increase in mortality risk per MELD point below a score of 20 and a 2% increase in mortality risk per MELD point over 20.[65] Mortality is also higher for intra-abdominal surgery (up to 25%) compared with other types of surgery.

The issue of "rescue" transplantation in cirrhotic patients who had severe decompensation and profound liver insufficiency after liver resection is also important. Indeed, cirrhotic patients have limited liver regeneration capacity. It has been shown that the persistence of a decrease in prothrombin index below 50% of normal (INR of ~1.7) and an increase in serum bilirubin above 50 μmol/L on postoperative day 5 is associated with a 60% risk of early mortality.[68] These criteria allow early identification of patients who may need emergency transplantation, provided there is no general contraindication

Prognosis in the Setting of Transplantation

It has been clearly shown that waiting time is not an accurate marker of waiting list mortality,[27] the "sickest first" policy has been widely adopted for organ allocation, with the aim of reducing waiting list mortality. Until now, liver transplantation has

been the main application for MELD score. MELD score is a robust marker of early mortality in cirrhotic patients across a wide spectrum of causes. It is a continuous score based on three readily available and relatively objective variables. Patients with particular conditions such as HCC can receive extra points corresponding to a given mortality risk. MELD can be updated in each patient according to the progression of the disease.

The implementation of MELD in the United States has been associated with a reduction in waiting list mortality.[30] In parallel, this "sickest first" policy has been associated with an increasing number of patients with advanced cirrhosis undergoing transplantation. Importantly, this shift in the indications for transplantation did not affect post-transplantation survival. In other words, transplanting patients with high MELD score does not necessarily translate into a significant increased post-transplant mortality, except for extreme values (over 30 to 35).[74,75] As HCC patients receive extra points, the implementation of MELD score also led to a significant decrease in the waiting list dropouts related to excessive tumor growth, without affecting post-transplant survival.[76]

MELD score proved highly efficient for prioritizing patients who are at high risk of dying without transplantation. However, an original approach consisting of

comparing liver transplant recipients' survival to that of comparable candidates without transplantation offered the possibility of assessing the transplant survival benefit. This comparison showed that transplant survival benefit steadily increased with increasing MELD score.[77] A very important finding is that only patients with a MELD score exceeding 15 to 17 derive a significant benefit from transplantation. Patients with a lower MELD would have a higher risk of dying from transplantation than they have of dying from the complications of cirrhosis. Transplantation would be futile in this subgroup.

However, a subset of patients with low MELD score and uncommon complications such as hepatopulmonary syndrome or mild portopulmonary hypertension are at high risk of dying in the absence of transplantation.

Materials and Methods

Materials and Methods

Cirrhotic patients admitted to the Section of Gastroenterology of Govt Stanley Medical College and hospital, a tertiary hospital, from January 2010 to may 2011 were studied.

Patients with decompensated cirrhosis liver who died during admission were selected as cases. Patients admitted with cirrhosis and its complications and who improved with treatment followed by discharge were selected as controls. Cases and controls were selected in a blinded manner.

Data collected included demographics; etiology of cirrhosis; indication for hospital admission; presence or absence of decompensation and portal hypertension; and the corresponding Child Pugh, MELD, and MELD-Na scores. Other hematological and biochemical markers were studied. Ethical committee approval was obtained for the study

The diagnosis of cirrhosis was made by clinical evaluation and with help of investigations. The clinical diagnosis of cirrhosis was made by a history of portal hypertension excluding other etiology, impaired liver function tests,

impaired clotting parameters, ultrasonographic or computer tomographic criteria.

The Child-Pugh, MELD and MELD Na scores were computed for each patient on admission. The MELD score and MELD Na score was calculated according to the original formula proposed by the Mayo clinic group

The principal study outcome was hospital mortality.

The cause of death was also determined.

Exclusion criteria-

Patients with portal hypertension not due to primary cirrhosis of liver were excluded. Patients with cirrhosis complicated by hepatocellular carcinoma were also not selected for this study

Statistical Analysis: Hematological, biochemical, scoring systems and clinical variables were reported as mean + SD, and group comparisons between cases and controls were carried out using the independent sample t test. Univariate analysis and multiple forward stepwise logistic regressions were used to identify clinical and biochemical parameters directly correlated with mortality

Results

Results

Total number of cases are 70.

Total number of controls are 70.

Both cases and controls were compared and found to be age and sex matched.

Both cases and control groups contained predominantly male patients, 91.4% and 94.3% respectively.

The Mean age of cases is 46.33 years and the mean age of controls is 45.56 years.

The mean duration of disease in cases was 20.01 months while the mean duration of disease in controls is 12.76 months.

The most common cause of liver dysfunction was found to be ethanol related.

The number of hepatic and non hepatic complications in both groups was similar and most patients had 2 or more comorbid conditions.

The most common cause of admission was hepatic encephalopathy in both groups. The other reasons for admission are renal insufficiency, refractory ascites, upper gastrointestinal bleeding

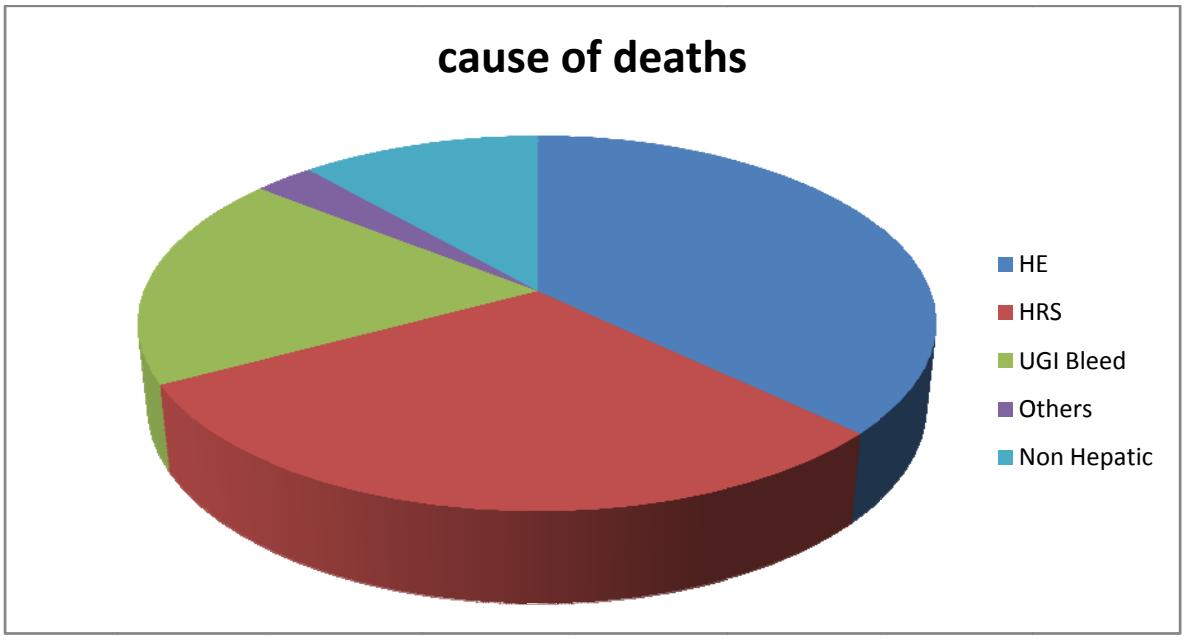
While evaluating for Chlid status in both groups, 11.4 **%** of patients in both groups had Child's A cirrhosis. 48.6% of cases had Child' s B cirrhosis while 52.9% of controls had Child's B cirrhosis. 40.0% cases and 35.7% controls had Child's C cirrhosis

The mean MELD and MELD-Na was significantly higher for the cases group compared to the control group i.e 24.47 & 18.4 for MELD and 29.10 & 23.54 for MELD-Na for the cases and controls respectively

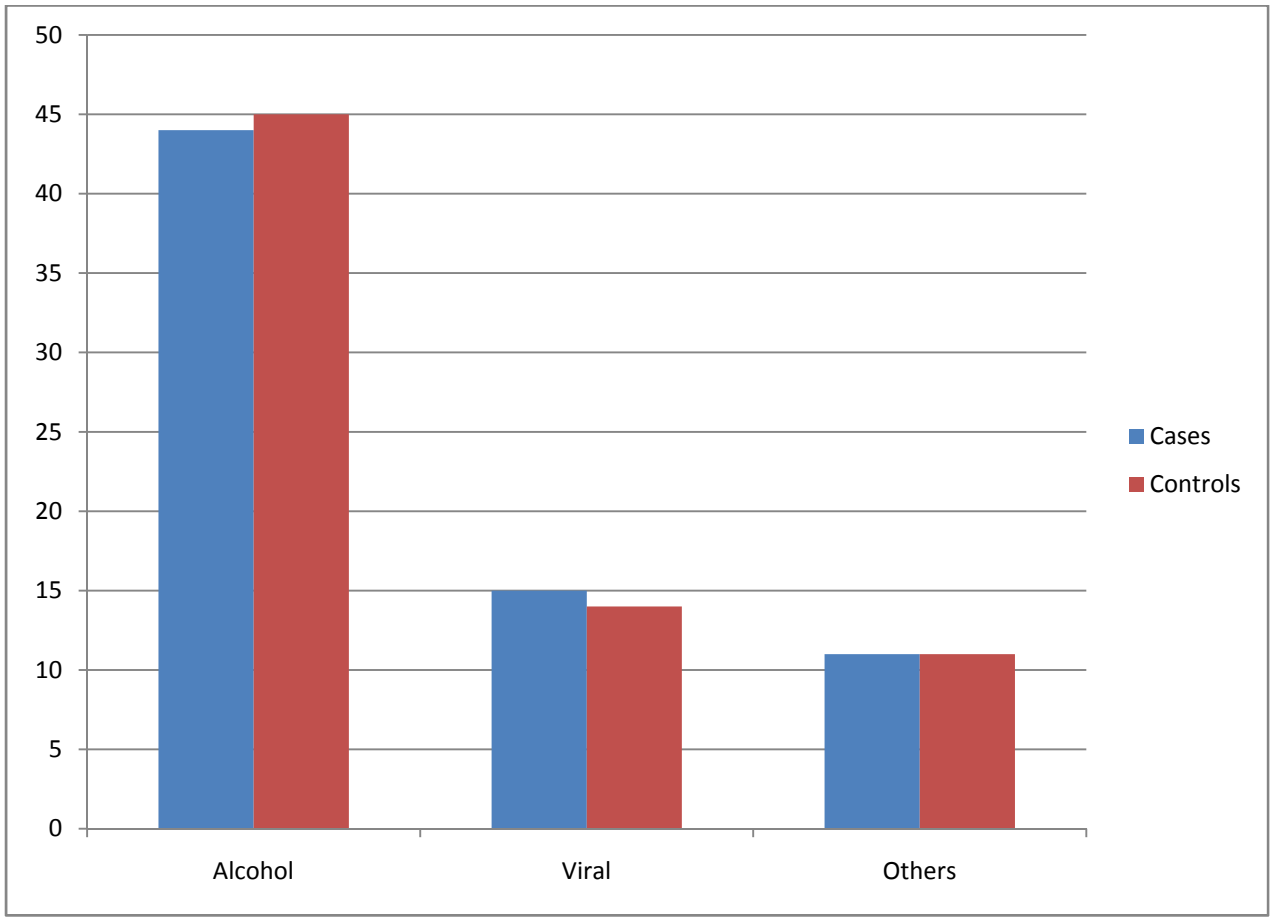
The most common causes of death are due to cirrhosis related complications associated with decompensation like hepatic encephalopathy, hepato renal syndrome and upper gastrointestinal bleeding. A small number of patients died due to non cirrhosis related complications most commonly infections.

Cause of Death

	Number	%
Hepatic related		
HE	26	37.14
HRS	21	30
UGI bleed	13	18.57
Others	2	2.85
Non hepatic related		
Infection	8	11.42
Others	-	-



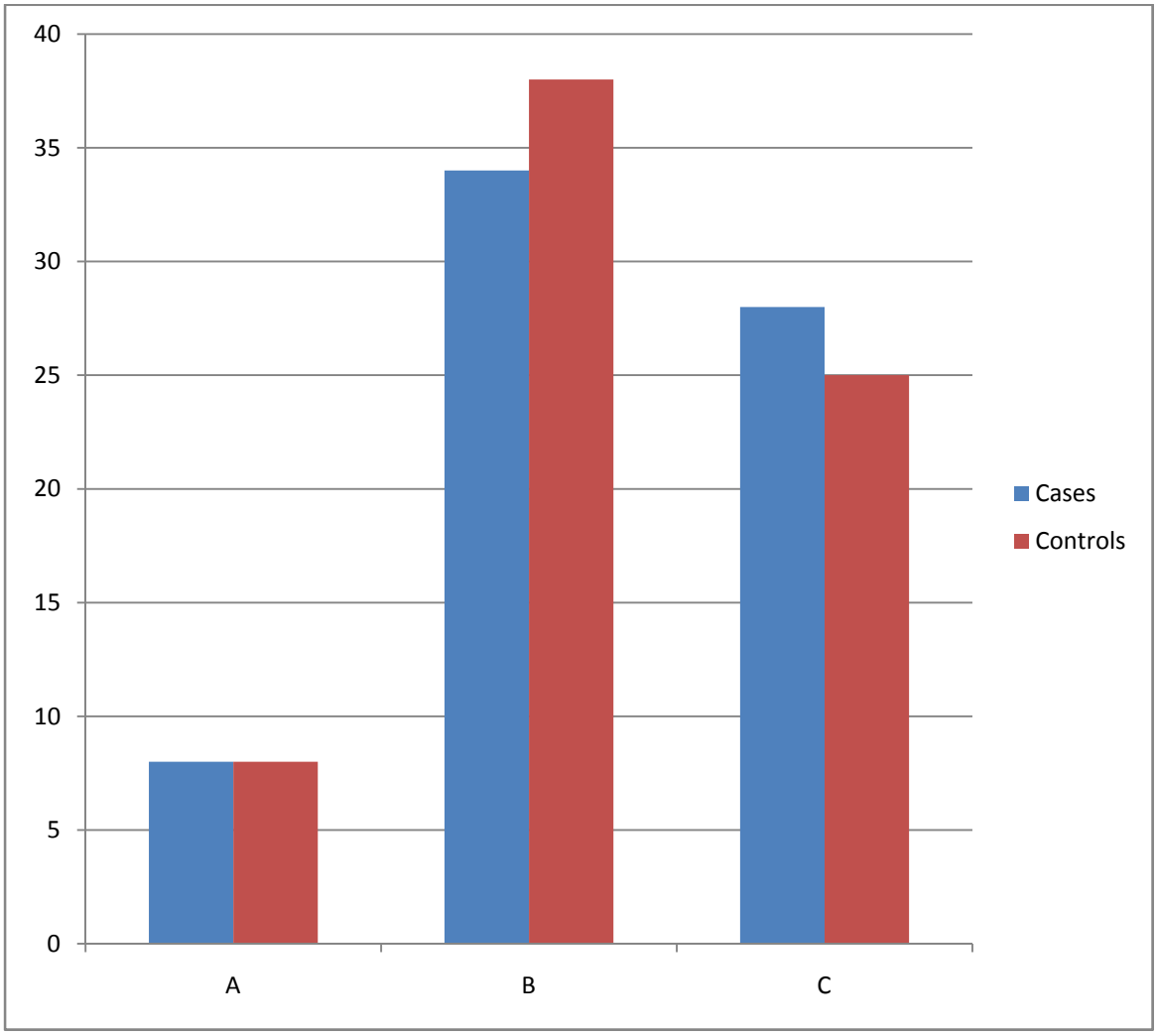
Etiology


50
45
40
35
30
25
20
15
10
5
0
Alcohol
Viral
Others
Cases
Controls

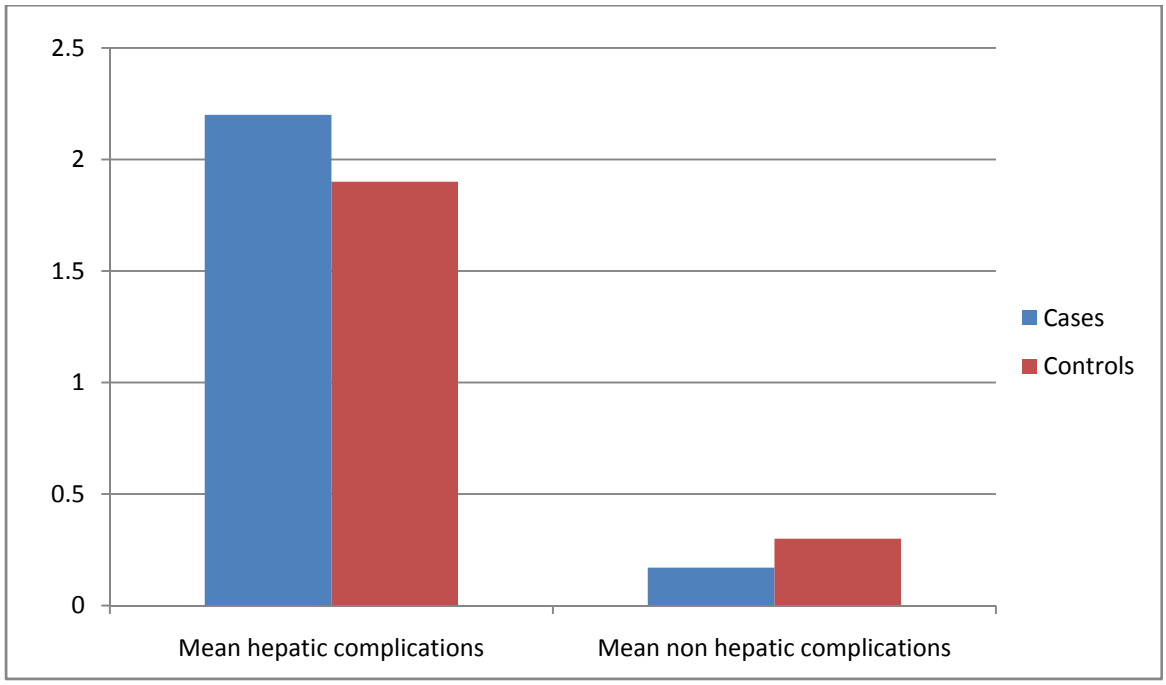
Demographics

	Cases	Controls
Total number	**70**	**70**
Gender	**Males -64:Females-6**	**Males-66; Females-4**
Age (Years)	**46.33**	**45.56**
complications related to hepatic decompensation (Mean)	**2.20**	**1.90**
Extra hepatic complications (Mean)	**0.17**	**0.3**
Etiology (Number)		
Alcohol	**44**	**45**
Viral	**15**	**14**
Others	**11**	**11**
CTP (Number)		
A	**8**	**8**
B	**34**	**38**
C	**28**	**25**
MELD (Mean)	**24.47**	**18.4**
MELD –Na (Mean)	**29.10**	**23.54**
TC (Mean)	**11662.86**	**8170.24**
% neutrophilia (Mean)	**75.01**	**69.99**
Platelet count (Mean)	**1,10.200**	**1,23,871.43**
Sodium (Mean)	**123.986**	**128.146**
Albumin (Mean)	**2.313**	**2.346**
SGPT (Mean)	**45.834**	**43.581**

CTP Score



Complications



Univariate analysis was performed on all variables .

A p value less than 0.05 was considered statistically significant.

This analysis revealed that increasing levels of MELD, MELD- Na, serum creatinine, INR, WBC , neutrophilia and duration of disease were significantly associated with increased risk of death.

	Cases (Mean)	Controls (Mean)	P Value
Duration of disease	**20.01**	**12.76**	**0.001**
Child status	7.8	8.9	0.86
MELD	24.47	18.40	0.001
MELD Na	29.19	23.54	0.001
Platelet	110200.00	123871.43	0.336
TC	**11662.86**	**8170.34**	**0.004**
% of neutrophils	**75.01**	**69.99**	**0.007**
Hemoglobin	8.963	8.645	0.358
APTT	34.36	32.13	0.114
INR	**1.859**	**1.55**	**0.008**
Creatinine	**1.993**	**1.1093**	**0.001**
SGPT	**69.36**	**47.69**	**0.039**
Albumin	2.313	2.346	0.5
Sodium	123.986	128.146	0.076

On multivariate forward stepwise logistic regression, **an elevated WBC count (p=0.02, OR 1.2)and creatinine (p=0.003, OR 1.2) were the only factors significantly associated with death**

Discussion

Discussion

The ability to objectively estimate patient risk for in hospital mortality outcomes is a challenging undertaking .

The Child-Pugh system is an important component of the prognostic evaluation of cirrhotic patients, although, this traditional scoring has several shortcomings. This issue intensified the search for a continuous disease severity score system that used more objective, readily verifiable parameters, which could be validated as a measure of liver disease severity, or predictor of mortality.

Child-Pugh score has been the reference for assessing the prognosis of cirrhosis for about three decades. The longevity of the Child-Pugh score can be explained by its empirical simplicity, its intuitiveness, and, overall, its good accuracy across a broad spectrum of causes and specific situations. Recently, MELD score emerged as a "modern" alternative to Child-Pugh score. There is no clear evidence that MELD is superior to Child-Pugh score in terms of accuracy. Studies comparing these scores have shown that the accuracy of Child-Pugh score for predicting 3-

month to 3-year survival is not always inferior to that of MELD score.[4] In addition, for many physicians, Child-Pugh score remains more convenient to use at the bedside and more explicit than MELD score.

MELD scoring system found individually to be superior over Child-Pugh in some reports.

In my study, the aim was to evaluate the in hospital mortality association of the 2 scoring systems – CHILD and MELD along with MELD sodium and also various clinical, hematological and biochemical parameters

MELD score has several strengths compared with Child-Pugh. The variables incorporated into the MELD score are simple and more objective. The weight of each variable has been determined by statistical analysis. MELD is a continuous score, which makes it more convenient for scoring individuals within large populations. In addition to organ allocation, MELD score has been validated across a large spectrum of causes of liver diseases. All these reasons make the MELD score likely to be the core tool for assessing the prognosis of cirrhosis in the future. By using MELD score, it can be reasonably assumed that physicians will get landmarks as simple as those they had with Child-Pugh score.

The Child- Pugh score uses two very subjective variables in its calculation - portosystemic encephalopathy and ascites.

MELD uses objective variables in their computation. MELD uses prothrombin time INR, serum bilirubin, and serum creatinine levels. In addition to these variables, MELD sodium uses sodium levels for computation

Bacterial infections are a frequent and severe complication of cirrhosis. Cirrhotic patients have an acquired immune deficiency because of dyshomeostasis and malnutrition. All host defense systems are compromised.

In my study, the result of the multivariate logistic analysis showed that an elevated WBC count was associated with in-hospital mortality.

On univariare analysis in my study, **mean duration of disease** was the clinical demographic which was found to significantly correlate with in hospital mortality.

In my study, Child score was not found to correlate with in hospital mortality, but both MELD and MELD Na were found to correlate significantly with in hospital mortality.

Though **hyponatremia** was found in previous studies to correlate with early 3 month mortality, it was **not significantly correlated** with in hospital mortality in my study.

My analysis also revealed that increasing levels of serum creatinine, INR, WBC and neutrophilia were significantly associated with increased risk of death

The present study is limited by the omission of the arterial blood gas examination as a result of **logistics**. Presence of ABG would have facilitated calculating APACHE score.

A previous studies by Wehler et al[69] to assess and compare the prognostic accuracy of the Child-Pugh classification, the Acute Physiology and Chronic Health Evaluation (APACHE) II system and the Sequential Organ Failure Assessment (SOFA) for predicting hospital mortality showed that the discriminatory power of the SOFA to predict short-term mortality in critically ill patients with cirrhosis is superior to the APACHE II and Child-Pugh systems. Also Prognostic scoring systems cannot replace the clinical evaluation of the patient.

The present study also confirms that **Child score is not predictive** of short term mortality. Features of multiple organ involvement like raised renal parameters, coagulopathy and leukocytosis are associated with early or in hospital mortality

In a similar study conducted by Ira I Yu et al comparing in hospital prognosis among cirrhotic patients: Child-Pugh versus APACHE III versus MELD scoring systems concluded that the APACHE III scoring system is superior to Child-Pugh and MELD scoring systems for prognosticating in-hospital mortality among decompensated cirrhotic patients. In the present study, as ABG could not be performed for all patients, APACHE could not be assessed. However components of the **APACHE score like creatinine and leukocytosis** showed relation to in hospital mortality.

The limitations of this present study is the lack of follow up of the control group once the patients have been discharged.

Comparison to previous study by Wehler et al

	Wehler study	Present study
Studied population	143 patients	140 patients (70 case & 70 controls)
Study methodology	Prospectively followed for up to 180 days or until mortality whichever was earlier	Prospectively followed only during the time of admission and separated into cases or controls based on **mortality or discharge**
Aim of the study	Compare the predictive accuracy of CTP, APACHE-II and SOFA for predicting hospital mortality	Study the causes of mortality and Look for association with mortality of various hematological parameters, biochemical values and scores like CTP, MELD and MELD sodium
Results of the study	CTP, APACHE and SOFA all predicted in hospital mortality but SOFA had the highest association	Mortality is associated with increasing Duration of disease, leukocytosis, neutrophilia, creatinine, INR, SGPT, MELD and MELD Sodium values
Similarity of the studies	Multiple system involvement is associated with mortality	Early mortality related to factors associated with a systemic inflammatory response syndrome
Disparity between the studies	CTP correlated with in hospital mortality	CTP was not significantly different in the mortality group compared to the control group
Advantage of my study	No control group	**Presence of control**

Comparision to a previous study by Ira I Yu et al

	Ira I Yu et al	Present study
Objective of study	To evaluate the prognostic accuracy of CP vs. APACHE III vs. MELD for predicting in-hospital mortality among decompensated cirrhotic patients	Study the causes of mortality and Look for association with mortality of various hematological parameters, biochemical values and scores like CTP, MELD and MELD sodium
Methods	64 patients studied (29 mortality &35 non mortality Pts) & CTP, . APACHE III and MELD calculated	140 patients studied (70 cases and 70 controls) and hematological parameters, biochemical values and scores like CTP, MELD and MELD sodium related to mortality studied
Results of the study	The APACHE III scoring system is superior to Child-Pugh and MELD scoring systems for prognosticating in-hospital mortality among decompensated cirrhotic patients	Components of APACHE III like INR & creatinine, MELD & MELD Na are related to in-hospital mortality. CTP not associated with in-hospital mortality
Advantage of my study	Smaller studied group (64)	Larger studied groups (140)
Parameter agreeing	Creatinine,INR, MELD	Creatinine,INR, MELD
Dissimilarity	APACHE-III being used	Selective parameters of APACHE-III used

Summary

Summary

In order to study the causes of in-hospital mortality of DCLD patients and assess the association of in-hospital mortality to various demographic factors like hematological parameters, biochemical parameters and scores like CTP, MELD, MELD Sodium, this study was undertaken

Patients with decompensated chronic liver disease who were admitted to the hospital were included in the study. Patients with decompensated chronic liver disease who died during hospitalization were included in cases group while the patients with decompensated chronic liver disease who improved with treatment and were discharged were included in the control group.

In both the cases and control groups, demographic parameters, biochemical parameters, hematological parameters and scores like CTP, MELD, MELD sodium were performed .

The parameters of both cases and control groups were compared, matched and statistical analysis was performed.

The main causes of death were a result of complications resulting from hepatic insufficiency like hepatic encephalopathy and hepatorenal syndrome. Non hepatic insufficiency related cause of mortality was mainly due to intercurrent infections

The results of my study showed that the duration of the underlying disease, hematological parameters like leukocytosis and neutrophilia, biochemical parameters like creatinine, INR, SGPT were significantly associated with mortality. While scores like MELD and MELD sodium are associated with in hospital mortality, Child's score was not related to in-hospital mortality

Conclusion

Conclusion

1. In my study, Inhospital mortality in cirrhosis is predominantly due to hepatic dysfunction.

2. The most common cause of mortality in decompensated cirrhosis is due to hepatic encephalopathy, hepato renal syndrome and upper gastro intestinal bleeding.

3. In my study -Intercurrent infections are associated with mortality and is the most common cause of mortality not related to hepatic decompensation in cirrhotic patients

4. In my study--Longer duration of disease, high leukocyte count, high neutrophilia, higher INR, high creatinine, high SGPT is associated with mortality. Patients who had died also exhibited higher MELD and MELD sodium value levels

5. Therefore when patients are admitted with hepatic decompensation, clinical parameter like duration of disease, hematological parameters like leukocyte count and neutrophilia, biochemical parameters like creatinine, SGPT and

INR can help predict short term or in hospital mortality along with MELD and MELD sodium.

6. In my study - Child score did not help in predicting short term mortality in hospitalized patients.

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Bibiliography

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Appendix

Proforma

Proforma

1. Name — Cause of Death :

2. Age/ DOB — Duration of admission:

3. Sex

4. MGE No

5. Blood group

6. Diagnosis with etiology

7. Resident of: Chennai / other city (specify)

8. Type of house: pucca/hut/semi

9. Per capita income

10. Literacy status: studied up to: no education/I-V/VI-VIII/IX-XII/college/professional/other courses

11. Occupation (as such)

12. No. of children

13. No. of adult family members

14. Religion: Hindu /Muslim /Christian/others (specify)

15. Smoker: - present/past/never

If past: duration of smoking in yrs - ≤1/1-≤5/5-≤10/ > 10-≤20/>20 Yrs

Brand:- Beedi/Cigarette/combined

Stopped when :-

If present: duration of smoking in yrs: ≤1/1-≤5/5-≤10/ > 10-≤20/>20 Yrs

Brand:- Beedi/Cigarette/combined

16. Alcohol:- present/past/never

17 . Dietetic history: - Veg / Non-veg

Clinical details:

1. Cirrhosis grade
2. Duration of illness (as such):
3. Age at diagnosis (as such):
4. Presence of acute exacerbations
5. Jaundice : Yes / No; if yes for how long……
6. Oedema legs & ascites : Yes / No
7. Coagulopathy : Yes/No
8. Hepato renal syndrome : Yes/No
9. GI Bleed : Yes/No
10. Hepatic encephalopathy : Yes/No
11. Weakness Yes / No
12. Hepatomegaly yes / No Bruit:Yes/no
13. *Splenomegaly* Yes / No Fever: Yes/no
14. *Hepatic encephalopathy*
15. **Investigations:**

Date	
TC	
Hb	
Platelets	
PCV	
PT	
APTT	
INR	
Urea	
Sugar F/PP	
Creatinine	
Na+	
K+	
Chloride	
Bicarbonate	
Bilirubin T	
Bilirubin B	

Albumin	
Globulin	
AST	
ALT	
GGT	
S. Alk Phos	
Ca 2+ (I)	
S. AFP	
HBsAg	
Anti HCV	
MELD -Na	
MELD	

13. Ascitic fluid analysis

14. UGI scopy:

15. Liver biopsy:

16. USG abdomen:

Liver	Shrunken/large/normal size	
	Echotexture: coarse / normal	
	Edges: regular/irregular	
	Nodularity: yes / No	
PV	Diameter: 9-12 mm ; > 12 mm	
	Direction of blood flow	Hepatopetal
		Hepatofugal
Spleen	Size	
Ascites	Present/absent	

17. CECT Abdomen:-

Liver	
Spleen	
Ascites	

18. Treatment:-

For liver disease: Yes/No

Pharmacotherapy:

Surgery:

Combination: - Yes/No

Master chart

Cases

Serial No	Name	Age	Sex	Diagnosis	Duration of disease	Cause of death	Hepatic complications	No of non hepatic complications	CHILD	MELD	MELD-Na	DF	so
1	Victor	51	1	Ethanol related DCLD	24 m	HRS	2	0	C	31	33	54	LO
2	Siva Rao	41	1	Ethanol related DCLD	36 m	HRS	2	0	C	48	46	238	LO
3	Prabukumar	35	1	Ethanol related DCLD	24m	HE	2	0	C	24	31	82	LO
4	Bala Krishnan	53	1	Ethanol related DCLD	12m	HRS/ SBP	3	0	C	29	29	74	LO
5	Jaya Prakash	36	1	Ethanol related DCLD	24 months	HRS	2	0	B	33	34	28	Lo
6	Elumalai	35	1	Ethanol related DCLD	12 months	HRS	2	0	C	36	38	84	LO
7	Suresh	35	1	Ethanol related DCLD	12 months	HE	2	0	C	21	28	47	LO
8	Saravanan	38	1	Ethanol related DCLD	6 months	HRS	2	0	C	35	37	68	Mi
9	Kesavan	58	1	Ethanol related DCLD	18 month	Sepsis	1	1	B	22	22	34	LO
10	Nedunchelian	50	1	HBV related DCLD	24 months	HRS	2	1	C	27	32	35	LO
11	Muthukrishnan	50	1	Cryptogenic DCLD	12 months	HE	3	0	C	40	40	266	LO
12	Murugesan	43	1	Ethanol related DCLD	3 month	HRS	3	0	C	38	39	159	mi
13	Shanmugam	43	1	Ethanol related DCLD	12 months	HE	2	0	C	32	35	55	LO
14	Gajendran	53	1	Ethanol related DCLD	12 months	HRS/ SBP	2	0	B	18	25	15	Hig
15	Ulaganathan	35	1	Ethanol related DCLD	24 months	UGI bleed	4	0	C	43	42	135	Hig
16	Karuppusamy	45	1	Ethanol related DCLD	2 months	HRS/ SBP	2	0	B	27	29	60	LO
17	Selvarani	40	2	Cryptogenic DCLD	6 months	HRS	2	0	B	23	27	62	LO
18	Utharakumar	27	1	Ethanol related DCLD	36 months	HE	3	0	C	22	22	27	LO
19	Sakthivel	41	1	HBV & Ethanol related DCLD	24 months	HE	2	0	B	28	33	31	LO
20	Ilayabharati	38	1	Ethanol related DCLD	48 months	UGI bleed	4	0	C	24	30	75	Mi
21	Sivan pillai	50	1	Ethanol related DCLD	24 months	HRS	2	0	B	31	31	26	Hig
22	Parasuraman	45	1	HBV related DCLD	60 months	HE	1	0	C	29	33	27	Mi
23	Srinivasan	18	1	Wilson disease related DCLD	12 months	HE	2	0	C	29	31	142	Mi
24	Selvaraj	50	1	Ethanol related DCLD	48 months	HRS	2	0	B	20	28	24	Mi
25	Santana krishnan	43	1	Ethanol related DCLD	6 months	HRS/ SBP	4	0	C	26	28	44	LO
26	Dayalan	39	1	Ethanol related DCLD	6 months	HE	3	0	C	28	33	81	LO
27	Azeemunisha	58	2	AI related DCLD	36 months	HE	1	0	B	22	29	65	Mi
28	Govindasami	61	1	HBV related DCLD	24 months	HRS	3	0	C	37	38	137	Mi
29	Parveenisha	27	2	Wilson disease related DCLD	4 months	HE	2	0	C	28	33	158	LO
30	Datchayani	57	2	HBV related DCLD	HE/ HRS	HE	2	0	C	48	46	38	mi
31	Pradeep kumar	29	1	BCS related DCLD	18 months	HE	2	0	B	11	22	38	Mi
32	Basha	60	1	Ethanol related DCLD	6 months	HE	2	1	B	16	25	24	LO
33	Selvaraj	55	1	HBV related DCLD	12 months	HE	3	0	B	11	22	20	LO
34	Thangam	73	2	Cryptogenic DCLD	48 months	Sepsis	2	0	A	13	13	61	Up
35	Arul Mozhi	52	1	Ethanol related DCLD	12 months	HE	2	0	B	12	23	34	Up
36	Rajasundar	41	1	HBV related DCLD	36 months	HRS	2	0	B	27	32	54	Mi
37	Prem Kumar	47	1	HBV related DCLD	12 months	HE	1	0	B	12	16	24	LO
38	Santama moorthi	43	1	Ethanol related DCLD	6 months	HE	2	0	B	13	23	52	LO
39	Paranthaman	55	1	NAFLD related DCLD	24 months	HE	3	0	B	20	28	65	Mi
40	Nelson	46	1	Ethanol related DCLD	6 months	UGI bleed	2	0	B	18	25	22	LO
41	Krishnamoorthi	47	1	Ethanol related DCLD	6 months	SBP	2	0	B	20	28	46	Up
42	Velu	50	1	Ethanol related DCLD	6 months	HE	1	1	B	18	26	43	Mi
43	Bala Manoharan	55	1	Cryptogenic DCLD	24 months	HE	2	0	B	20	21	44	Mi
44	Krishna Moorthy	59	1	Cryptogenic DCLD	12 months	HE	2	0	B	15	24	40	Mi
45	Prasad	50	1	Ethanol related DCLD	6 months	UGI bleed	1	0	A	10	21	11	LO
46	Lenin Joseph	15	1	Cryptogenic DCLD	12 months	UGI bleed	2	0	B	21	28	39	LO
47	Elangovan	58	1	HBV related DCLD	48 months	HE	3	0	B	26	31	22	LO
48	Prasanna Kumar	45	1	Ethanol related DCLD	60 months	HRS	2	0	B	29	33	50	LO
49	Thirunavakarasu	63	1	HBV related DCLD	60 months	Cellulitis leg	2	1	C	35	37	74	Mi
50	Muthukrishnan	42	1	Ethanol related DCLD	6 months	UGI bleed	2	0	A	13	21	48	LO
51	Rajendran	52	1	Ethanol related DCLD	12 months	UGI bleed	4	0	B	22	29	29	LO
52	Peter John	39	1	Ethanol related DCLD	12 months	UGI bleed	3	0	A	7	19	24	LO
53	Kesavan	56	1	HBV & Ethanol related DCLD	12 months	UGI bleed	1	0	A	13	23	19	Mi
54	Sachitanandam	62	1	Ethanol related DCLD	6 months	UGI bleed	1	0	A	14	24	18	LO
55	Ashok Joshi	45	1	Ethanol related DCLD	6 months	HE	2	1	B	20	26	31	Mi
56	Pandian	42	1	Ethanol related DCLD	6 months	Sepsis	1	1	A	9	10	19	LO
57	Kumarapillai	56	1	Ethanol related DCLD	36 months	Sepsis	2	0	B	18	26	26	LO
58	Rajeshwari	50	2	HCV related DCLD	24 months	UGI bleed	1	1	A	9	20	6	Mi
59	Munusami	54	1	Ethanol related DCLD	6 months	HE	1	1	B	17	26	33	LO
60	Gopala Krishnan	48	1	Ethanol related DCLD	24 months	HRS	3	0	C	28	30	35	Mi
61	Ethirajulu	54	1	Ethanol related DCLD	24 months	UGI bleed	2	0	B	28	33	66	LO
62	Parasuram	50	1	Ethanol related DCLD	36 months	HRS	3	0	C	40	40	88	LO
63	Ponmarimuthu	38	1	Ethanol related DCLD	12 months	Sepsis	3	1	C	29	33	69	Mi
64	Subramani	60	1	HBV & Ethanol related DCLD	48 months	SBP	4	0	C	45	44	91	LO
65	Ashok Raj	43	1	Ethanol related DCLD	12 months	HRS	3	1	C	40	40	111	LO
66	Sukumaran	45	1	Ethanol related DCLD	24 months	Sepsis	2	0	B	25	31	20	LO
67	Vinayagam	35	1	HBV & Ethanol related DCLD	12 months	UGI bleed	2	0	B	23	26	28	LO
68	Mani	60	1	Ethanol related DCLD	12 months	Sepsis	1	1	B	20	27	33	LO
69	Bala Subramanian	38	1	Ethanol related DCLD	24 months	HE	2	0	B	24	30	39	LO
70	Jeeva	36	1	HCV related DCLD	36 months	HRS	4	0	C	23	25	35	Mi

Controls

Serial No	Name	Age	Sex	Diagnosis	Duration of disease	Cause of admission	Hepatic complications	Non hepatic complications	Child's	MELD	MELD Na	DF	socioe
1	Kali	48	1	HBV related DCLD	6 month	UGI bleed	2	0	A	16	25	44	Lower
2	Kumaresar	41	1	Ethanol related DCLD	5 month	SBP/ HRS	2	0	B	11	15	6	Lower
3	Kulothung	34	1	Cryptogenic DCLD	36 months	HE	3	2	B	18	22	50	Lower
4	Rajendran	50	1	Ethanol related DCLD	6 month	HE	1	0	B	28	32	114	middle
5	Narayanar	36	1	Ethanol related DCLD	24 months	HRS	3	0	C	27	28	61	middle
6	Barkatulla	35	1	Ethanol related DCLD	12 months	HRS	3	0	C	18	26	24	Lower
7	Ganesan	37	1	Ethanol related DCLD	12 months	HE	2	0	C	23	28	85	Lower
8	Kannan	36	1	Cryptogenic DCLD	48 months	HE	2	0	B	12	23	25	Lower
9	Shanmuga	58	1	Ethanol related DCLD	9 month	HE	1	1	B	15	21	37	middle
10	Manipalla	51	1	Ethanol related DCLD	6 month	HE	2	0	C	15	24	32	Lower
11	Kailasam	49	1	Ethanol related DCLD	6 month	HE	1	0	B	18	26	12	Lower
12	Abu bakka	43	1	Ethanol related DCLD	12 months	Cellulitis leg	1	1	B	25	29	56	middle
13	Aravind	42	1	Ethanol related DCLD	12 months	HE	4	0	C	19	25	63	middle
14	Durairaj	55	1	Ethanol related DCLD	6 month	HRS	2	0	C	27	32	60	Lower
15	Ramakrish	34	1	HBV & Ethanol related DCLD	6 month	Cellulitis leg	1	1	B	17	22	19	middle
16	Valluvama	46	1	Ethanol related DCLD	12 months	refractory ascites/ H. encephal	2	0	B	14	21	79	middle
17	Pandian	32	1	Ethanol related DCLD	6 month	SBP	3	0	C	27	31	76	Lower
18	Krishnamo	27	1	Ethanol related DCLD	6 month	HE	2	0	B	19	27	44	middle
19	Murali	41	1	Ethanol related DCLD	12 months	HE	3	0	C	24	30	72	middle
20	Ganesan	37	1	Ethanol related DCLD	6 month	SBP	3	0	B	18	19	21	Lower
21	Periyasam	48	1	Ethanol related DCLD	18 months	HE	2	1	B	17	24	29	Lower
22	Purushotta	45	1	Ethanol related DCLD	6 month	UGI bleed	2	0	B	23	26	37	middle
23	Balaji	18	1	Wilson disease	24 months	HE	1	0	B	19	22	37	Lower
24	Etheraj	49	1	HBV related DCLD	6 month	HE	2	0	B	16	20	22	Lower
25	Sakthi Vel	43	1	Cryptogenic DCLD	24 months	HE	2	1	B	16	18	15	middle
26	Mani	42	1	Ethanol related DCLD	12 months	UGI bleed	1	0	A	18	18	14	middle
27	Parimala	60	2	HBV related DCLD	6 month	UGI bleed	1	1	A	9	18	20	Lower
28	Padmanab	62	1	Ethanol related DCLD	24 months	HE	2	0	C	18	20	49	Lower
29	Kumar	25	1	Ethanol related DCLD	3 months	UGI bleed	3	0	B	26	31	73	Lower
30	Kasthuri	56	2	Cryptogenic DCLD	12 months	HE	1	0	C	12	23	33	middle
31	Selvam	30	1	Ethanol related DCLD	24 months	Sepsis	1	1	B	27	30	109	Lower
32	Dhanapau	60	1	Ethanol related DCLD	36 months	UGI bleed	1	0	A	13	16	15	Lower
33	Jothi	55	1	HBV & Ethanol related DCLD	6 month	UGI bleed	1	0	A	8	8	15	Lower
34	Kathija Be	73	2	NAFLD related DCLD	6 month	HE	2	0	C	19	27	45	Lower
35	Venkatesa	50	1	Ethanol related DCLD	6 month	HRS	1	1	B	25	31	29	middle
36	Anthony D	40	1	Ethanol related DCLD	12 months	HE	2	0	B	12	23	15	Lower
37	Murugan	45	1	Ethanol related DCLD	12 months	HE	1	1	B	11	22	19	Lower
38	Vijayan	44	1	Ethanol related DCLD	6 month	HE	1	0	B	14	20	25	Lower
39	Venkata Su	56	1	NAFLD related DCLD	6 month	HRS	3	1	C	26	31	51	Lower
40	Selva Panc	45	1	Ethanol related DCLD	6 month	HRS	4	1	C	28	32	73	middle
41	Venkatesh	45	1	Ethanol related DCLD	48 months	SBP	3	1	C	19	27	31	Lower
42	Sekar	50	1	Ethanol related DCLD	12 months	HE	2	0	B	19	27	69	middle
43	Puniyakoti	55	1	HCV & Ethanol related DCLD	6 month	HE	2	1	C	20	22	49	Lower
44	Sundaram	61	1	Cryptogenic DCLD	6 month	HE	2	1	B	11	22	7	middle
45	Annadurai	50	1	Cryptogenic DCLD	24 months	UGI bleed	1	1	A	10	10	11	middle
46	George Fe	13	1	Wilson disease	36 months	SBP	3	0	B	19	19	55	Lower
47	Anand	60	1	Ethanol related DCLD	6 month	UGI bleed	2	0	A	9	20	7	Lower
48	Rama Subr	46	1	Cryptogenic DCLD	36 months	Refractory Ascites	2	0	B	14	22	31	middle
49	Ramamoo	63	1	HBV related DCLD	6 month	HE	1	0	B	18	26	55	Lower
50	Venkatesa	40	1	Ethanol related DCLD	24 months	HE	2	0	B	18	26	30	Lower
51	Kotti	55	1	Ethanol related DCLD	12 months	HE	1	0	B	23	29	35	Lower
52	Ravi	44	1	Ethanol related DCLD	6 month	HRS	2	0	B	34	35	69	Lower
53	Aravind	53	1	Ethanol related DCLD	12 months	SBP	2	0	C	23	29	86	Lower
54	Bala Naga	64	1	HCV related DCLD/ PHT	12 months	HE	1	0	B	12	14	34	middle
55	Rajendran	45	1	Ethanol related DCLD	6 month	HE	1	0	C	20	20	75	Lower
56	Parthasara	44	1	Ethanol related DCLD	12 months	HE	2	0	C	21	22	84	Lower
57	Murugesar	58	1	Ethanol related DCLD	6 month	HRS	2	1	B	11	14	16	middle
58	Fathima B	17	2	Cryptogenic DCLD	6 month	HE	2	0	B	12	14	9	Lower
59	Krishnamo	47	1	Ethanol related DCLD	6 month	SBP	2	0	C	20	28	42	middle
60	Pushparaj	45	1	HBV related DCLD	12 months	HE	2	0	B	15	19	39	Lower
61	Gurusamy	45	1	Ethanol related DCLD	12 months	HRS	3	0	C	23	29	38	Lower
62	Selvam	45	1	Ethanol related DCLD	6 month	HRS	1	0	C	27	32	33	middle
63	Guna Seka	35	1	Ethanol related DCLD	6 month	HE	2	0	C	23	26	71	middle
64	Balanagara	64	1	HCV related DCLD/ PHT	18 months	SBP	1	0	B	16	21	44	Lower
65	Venkatesh	44	1	Ethanol related DCLD	12 months	HE	2	1	C	27	29	121	Lower
66	Manisekar	45	1	Ethanol related DCLD	6 month	SBP	2	0	B	17	26	45	middle
67	Alagu Sunc	32	1	Ethanol related DCLD	6 month	UGI bleed	1	0	B	15	24	31	Lower
68	Damodhar	70	1	HCV related DCLD/ PHT	6 month	UGI bleed	1	1	A	7	7	15	Lower
69	Ramesh Cl	44	1	Ethanol related DCLD	18 months	HE	3	0	C	19	24	40	middle
70	Murali	32	1	Ethanol related DCLD	6 month	HE	3	1	C	18	19	47	middle

Serial No	Name	Age	Sex	Diagnosis	Duration of disease	Cause of death	Hepatic complications	No of non hepatic complications	CHILD	MELD	MELD-Na	DF	socioeconc	platelet	TC	NEUTROPI	DC	Hemoglobi	ESR	APTT	PT	INR	
1	Victor	51	1	Ethanol related DCLD	24 m	HRS	2	0	C	31	33	54	LOWER	94,000	8,800	93	93/03/04	9.9	38	36	24	1.8	
2	Siva Rao	41	1	Ethanol related DCLD	36 m	HRS	2	0	C	48	46	238	LOWER	1.81,000	15,300	81	81/12/07	8.8	24	32	60	4.6	
3	Prabukumar	35	1	Ethanol related DCLD	24m	HE	2	0	C	24	31	82	LOWER	132,000	21,000	81	81/09/10	12	46	34	26	1.9	
4	Bala Krishnan	53	1	Ethanol related DCLD	12m	HRS/ SBP	3	0	C	29	29	74	LOWER	202,000	41,700	92	92/02/06	7.6	45	34	29	2.2	
5	Jaya Prakash	36	1	Ethanol related DCLD	24 months	HRS	2	0	B	33	34	28	Lower	95,000	6900	67	67/23/10	6	84	24	18	2	
6	Elumalai	35	1	Ethanol related DCLD	12 months	HRS	2	0	C	36	38	84	LOWER	89,000	16,600	81	81/09/10	4.4	82	32	29	2.2	
7	Suresh	35	1	Ethanol related DCLD	12 months	HE	2	0	C	21	28	47	LOWER	2.21.000	27,000	87	87/06/07	6	60	32	20	1.5	
8	Saravanan	38	1	Ethanol related DCLD	6 months	HRS	2	0	C	35	37	68	Middle	91,000	14,400	85	85/09/06	8	62	34	26	1.9	
9	Kesavan	58	1	Ethanol related DCLD	18 month	Sepsis	1	1	B	22	22	34	LOWER	130,000	8,800	75	75/20/05	8	22	26	18	1.9	
10	Nedunchelian	50	1	HBV related DCLD	24 months	HRS	2	1	C	27	32	35	LOWER	100,000	10,800	70	70/30/0	10.2	15	50	18	1.7	
11	Muthukrishnan	50	1	Cryptogenic DCLD	12 months	HE	3	0	C	40	40	266	LOWER	65,000	13,200	78	78/20/2	5.2	40	60	70	5.8	
12	Murugesan	43	1	Ethanol related DCLD	3 month	HRS	3	0	C	38	39	159	middle	69,000	7,400	65	65/17/10/(	8.4	42	52	45	3.4	
13	Shanmugam	43	1	Ethanol related DCLD	12 months	HE	2	0	C	32	35	55	LOWER	100,000	4,200	60	60/38/2	8.2	25	43	23	2.2	
14	Gajendran	53	1	Ethanol related DCLD	12 months	HRS/ SBP	2	0	B	18	25	15	Higher	266,000	15,000	88	88/10/2	9.6	20	28	16	1.1	
15	Ulaganathan	35	1	Ethanol related DCLD	24 months	UGI bleed	4	0	C	43	42	135	Higher	64,000	38,700	85	85/9/6	10	40	51	38	2.8	
16	Karuppusamy	45	1	Ethanol related DCLD	2 months	HRS/ SBP	2	0	B	27	29	60	LOWER	69,000	19,800	86	86/8/6	8.1	36	54	24	1.8	
17	Selvarani	40	2	Cryptogenic DCLD	6 months	HRS	2	0	B	23	27	62	LOWER	168,000	25,800	90	90/8/2	8.9	34	38	23	1.7	
18	Utharakumar	27	1	Ethanol related DCLD	36 months	HE	3	0	C	22	22	27	LOWER	130,000	4,800	72	72/22/6	7.7	38	26	15	1.1	
19	Sakthivel	41	1	HBV & Ethanol related DCLD	24 months	HE	2	0	B	28	33	31	LOWER	101,000	8,900	69	69/30/1	8.4	24	32	18	1.7	
20	Ilayabharati	38	1	Ethanol related DCLD	48 months	UGI bleed	4	0	C	24	30	75	Middle	149,000	16,600	86	86/10/4	9.6	40	60	25	1.8	
21	Sivan pillai	50	1	Ethanol related DCLD	24 months	HRS	2	0	B	31	31	26	Higher	138,000	3,500	60	60/37/3	10.7	48	26	14	1	
22	Parasuraman	45	1	HBV related DCLD	60 months	HE	1	0	C	29	33	27	Middle	140,000	7,200	65	65/32/3	10	110	24	17	1.1	
23	Srinivasan	18	1	Wilson disease related DCLD	12 months	HE	2	0	C	29	31	142	Middle	22,000	12,700	81	81/17/2	5.9	52	62	41	3.1	
24	Selvaraj	50	1	Ethanol related DCLD	48 months	HRS	2	0	B	20	28	24	Middle	112,000	9,300	78	78/20/2	7.9	45	30	18	1.4	
25	Santana krishnan	43	1	Ethanol related DCLD	6 months	HRS/ SBP	4	0	C	26	28	44	LOWER	40,000	3,800	81	81/15/4	8.3	60	34	21	1.7	
26	Dayalan	39	1	Ethanol related DCLD	6 months	HE	3	0	C	28	33	81	LOWER	149,000	23,300	85	85/13/2	6.7	45	38	30	2.2	
27	Azeemunisha	58	2	AI related DCLD	36 months	HE	1	0	B	22	29	65	Middle	100,000	5,100	60	60/40/0	10.2	12	28	25	1.8	
28	Govindasami	61	1	HBV related DCLD	24 months	HRS	3	0	C	37	38	137	Middle	47,000	5,100	80	80/10/10	10	45	54	42	3.1	
29	Parveenisha	27	2	Wilson disease related DCLD	4 months	HE	2	0	C	28	33	158	LOWER	98,000	10,900	75	75/15/10	6.2	12	44	46	3.6	
30	Datchayani	57	2	HBV related DCLD	HE/ HRS	HE	2	0	C	48	46	38	middle	88,000	4,600	71	71/19/10	6.5	72	32	21	1.6	
31	Pradeep kumar	29	1	BCS related DCLD	18 months	HE	2	0	B	11	22	38	Middle	2.48,000	10,800	90	90/02/08	12	36	32	21	1.5	
32	Basha	60	1	Ethanol related DCLD	6 months	HE	2	1	B	16	25	24	LOWER	120,000	8,200	60	60/36/4	11.2	15	28	17	1.3	
33	Selvaraj	55	1	HBV related DCLD	12 months	HE	3	0	B	11	22	20	LOWER	90,000	5,500	68	68/16/12	5.5	120	26	17	1.2	
34	Thangam	73	2	Cryptogenic DCLD	48 months	Sepsis	2	0	A	13	13	61	Upper	108,000	15,200	62	62/28/10	11.2	55	32	26	1.6	
35	Arul Mozhi	52	1	Ethanol related DCLD	12 months	HE	2	0	B	12	23	34	Upper	83,000	5,500	74	74/16/10	8.7	24	34	20	1.4	
36	Rajasundar	41	1	HBV related DCLD	36 months	HRS	2	0	B	27	32	54	Middle	56,000	2,100	66	66/28/3	13.5	22	31	24	1.6	
37	Prem Kumar	47	1	HBV related DCLD	12 months	HE	1	0	B	12	16	24	LOWER	84,000	6,400	85	85/9/6	12.6	15	28	18	1.3	
38	Santama moorthi	43	1	Ethanol related DCLD	6 months	HE	2	0	B	13	23	52	LOWER	52,000	5,100	55	55/30/10	7.8	24	36	24	1.6	
39	Paranthaman	55	1	NAFLD related DCLD	24 months	HE	3	0	B	20	28	65	Middle	78,000	14,400	86	86/10/4	11	42	36	26	1.9	
40	Nelson	46	1	Ethanol related DCLD	6 months	UGI bleed	2	0	B	18	25	22	LOWER	151,000	6,800	65	65/27/8	10.9	15	30	17	1.9	
41	Krishnamoorthi	47	1	Ethanol related DCLD	6 months	SBP	2	0	B	20	28	46	Upper	57,000	1,700	80	80/19/1	9	16	30	20	1.4	
42	Velu	50	1	Ethanol related DCLD	6 months	HE	1	1	B	18	26	43	Middle	55,000	5,200	76	76/17/7	11.6	14	30	21	1.5	
43	Bala Manoharan	55	1	Cryptogenic DCLD	24 months	HE	2	0	B	20	21	44	Middle	36,000	3,800	73	73/24/3	10.8	84	30	20	1.5	
44	Krishna Moorthy	59	1	Cryptogenic DCLD	12 months	HE	2	0	B	15	24	40	Middle	48,000	5,000	64	64/30/6	9.2	32	32	21	1.5	
45	Prasad	50	1	Ethanol related DCLD	6 months	UGI bleed	1	0	A	10	21	11	LOWER	100,000	5,700	70	70/24/6	10	12	28	15	1.2	
46	Lenin Joseph	15	1	Cryptogenic DCLD	12 months	UGI bleed	2	0	B	21	28	39	LOWER	74,000	5,000	82	82/15/3	8.6	15	32	18	1.4	
47	Elangovan	58	1	HBV related DCLD	48 months	HE	3	0	B	26	31	22	LOWER	168,000	7,000	88	88/10/2	12.5	48	28	16	1.2	
48	Prasanna Kumar	45	1	Ethanol related DCLD	60 months	HRS	2	0	B	29	33	50	LOWER	159,000	7,800	84	84/13/3	7.1	110	34	22	1.5	
49	Thirunavakarasu	63	1	HBV related DCLD	60 months	Cellulitis leg	2	1	C	35	37	74	Middle	136,000	12,900	85	85/10/5	7.6	122	56	24	1.9	
50	Muthukrishnan	42	1	Ethanol related DCLD	6 months	UGI bleed	2	0	A	13	21	48	LOWER	67,000	9,100	86	86/9/5	10.3	247	34	23	1.6	
51	Rajendran	52	1	Ethanol related DCLD	12 months	UGI bleed	4	0	B	22	29	29	LOWER	65,000	12,000	82	82/10/8	6.5	122	41	19	2.1	
52	Peter John	39	1	Ethanol related DCLD	12 months	UGI bleed	3	0	A	7	19	24	LOWER	100,000	9,300	63	63/32/3	9.4	78	26	18	1.1	
53	Kesavan	56	1	HBV & Ethanol related DCLD	12 months	UGI bleed	1	0	A	13	23	19	Middle	220,000	18,100	52	52/42/6	8.3	40	26	17	1.8	
54	Sachitanandam	62	1	Ethanol related DCLD	6 months	UGI bleed	1	0	A	14	24	18	LOWER	186,000	7,300	52	52/46/2	7.2	15	27	16	1.2	
55	Ashok Joshi	45	1	Ethanol related DCLD	6 months	HE	2	1	B	20	26	31	Middle	57,000	14,400	85	85/7/8	8.9	50	31	18	1.3	
56	Pandian	42	1	Ethanol related DCLD	6 months	Sepsis	1	1	A	9	10	19	LOWER	105,000	6,800	60	60/30/10	11.6	50	30	17	1.3	
57	Kumarapillai	56	1	Ethanol related DCLD	36 months	Sepsis	2	0	B	18	26	26	LOWER	42,000	9,200	64	64/32/4	7.5	85	28	17	1.4	
58	Rajeshwari	50	2	HCV related DCLD	24 months	UGI bleed	1	1	A	9	20	6	Middle	188,000	7,900	60	60/34/6	6.1	24	28	14	1.3	
59	Munusami	54	1	Ethanol related DCLD	6 months	HE	1	1	B	17	26	33	LOWER	45,000	6,800	52	52/36/12	7.7	26	29	19	1.3	
60	Gopala Krishnan	48	1	Ethanol related DCLD	24 months	HRS	3	0	C	28	30	35	Middle	98,000	7,800	70	70/28/2	9.4	32	30	19	1.5	
61	Ethirajulu	54	1	Ethanol related DCLD	24 months	UGI bleed	2	0	B	28	33	66	LOWER	74,000	12,300	78	78/12/10	7.8	115	32	21	1.7	
62	Parasuram	50	1	Ethanol related DCLD	36 months	HRS	3	0	C	40	40	88	LOWER	83,000	14,200	80	80/12/8	6.2	42	34	26	2	
63	Ponmarimuthu	38	1	Ethanol related DCLD	12 months	Sepsis	3	1	C	29	33	69	Middle	126,000	17,800	80	80/11/9	11.1	45	30	22	1.6	
64	Subramani	60	1	HBV & Ethanol related DCLD	48 months	SBP	4	0	C	45	44	91	LOWER	65,000	11,300	84	84/12/4	9.1	62	36	29	3.8	
65	Ashok Raj	43	1	Ethanol related DCLD	12 months	HRS	3	1	C	40	40	111	LOWER	116,000	11,200	78	78/14/8	10.7	16	34	31	3.8	
66	Sukumaran	45	1	Ethanol related DCLD	24 months	Sepsis	2	0	B	25	31	20	LOWER	110,000	35,100	85	85/7/8	11.2	48	28	15	1.3	
67	Vinayagam	35	1	HBV & Ethanol related DCLD	12 months	UGI bleed	2	0	B	23	26	28	LOWER	85,000	7,000	55	55/45	10.8	110	30	17	1.6	
68	Mani	60	1	Ethanol related DCLD	12 months	Sepsis	1	1	B	20	27	33	LOWER	405,000	27,300	96	96/2/2	11.6	38	28	16	1.3	
69	Bala Subramanian	38	1	Ethanol related DCLD	24 months	HE	2	0	B	24	30	39	LOWER	63,000	11,200	82	82/12/6	9.2	12	28	18	1.4	
70	Jeeva	36	1	HCV related DCLD	36 months	HRS	4	0	C	23	25	35	Middle	61,000	15,000	67	67/24/9	8.6	30	32	20	1.6	

Sugar	Urea	Creat	T. Bil	D.Bil	SGOT	SGPT	SAP	GGT	T.Protein	Albumin	Globulin	Sodium	Potassium	HIV	HBsAg	Anti HCV	complications	Others
74	127.2	3.79	3.8	1.55	68	25	266	35	4.5	2.3	2.2	130.4	5.11	NEG	NEG	NEG	ascites / HRS/ ENC	
65	139.6	11.74	21.5	19.3	83	27	414	112	6.3	2	4.3	128	3.65	NEG	NEG	NEG	HRS/ HE	
81	35.3	0.7	22.5	19.1	337	172	332	58	6.7	3	3.7	112.4	5.47	NEG	NEG	NEG	UGI bleed/ascites	
29	98.4	4.3	1.5	0.8	44	16	285	3	6.1	1.5	4.6	177.3	7.59	NEG	NEG	NEG	Ascites/ HE	
70	106.67	4.8	4.5	3.3	52	45	132	21	5.2	2.2	3	132	3.7	NEG	NEG	NEG	Rec Encephalopathy/ HRS	
74	66.86	3.37	10.49	6.6	752	161	170	30	5.4	2	3.4	118.5	4.91	NEG	NEG	NEG	Ascites/ HE	
101	51.68	0.86	14.3	10.5	173	98	272	100	5	2.1	2.9	122.5	3.33	NEG	NEG	NEG	Bleeder	
75	96.4	4.2	8.2	5.8	123	87	220	60	5.6	2.2	3.4	114	5.2	NEG	NEG	NEG	HE	
161	59	2.7	10.6	6.3	87	26	190	60	7.3	1.8	5.5	138	4.62	NEG	NEG	NEG	cellulitis leg/ RF	cellulitis leg
172	88	1.7	116	4.6	392	211	66	24	6.9	3.1	3.8	116	4.6	NEG	POS	NEG	HE	DM
60	38	1.3	4	2.1	140	132	210	42	5	1.8	3.2	120	4.5	NEG	NEG	NEG	coagulopathy/ bleeder	
262	147.24	2.4	11.5	8.9	255	156	336	53	6.7	1.5	5.2	118.9	5.05	NEG	NEG	NEG	HE/ HRS/ Coag	
170	78	1.6	8.6	4.2	142	72	132	24	5.8	3.9	1.9	95	3.7	NEG	NEG	NEG	Ascites/ bleeder	
108	91.5	3	0.9	0.5	51	23	151	45	5.6	2.4	3.2	127	4.6	NEG	NEG	NEG	Ascites	
120	115	7	20.4	16.8	161	153	237	123	4.9	2.4	2.5	121	3.6	NEG	NEG	NEG	coagulopathy/ HRS/encephalopathy	
58	90.67	1.68	9.6	5.3	125	65	255	10	6	2	4	135.3	5.4	NEG	NEG	NEG	Ascites	
169	26	0.4	15.5	12.77	36	39	284	40	4.8	2.4	2.4	131.6	3.06	NEG	NEG	NEG	Refractory ascites	
119	62.4	1.5	17.4	11.3	146	117	113	54	5.3	1.4	3.9	139	5.54	NEG	NEG	NEG	Ascites/ bleeder/ HRS	
55	99	2.1	8.4	5.5	92	38	199	30	6.8	2	4.8	118	5.6	NEG	POS	NEG	HRS / ascites	
118	44.9	0.7	20.01	11.09	147	51	259	120	6.8	3	3.8	124	5.4	NEG	NEG	NEG	SBP/ ascites/ coagulopathy	
146	115	4.2	21.6	14	38	102	387	43	5	2.3	2.7	148	1.83	NEG	NEG	NEG	ascites	
78	52	1.5	8.6	5.2	160	75	260	40	4.9	2.2	2.7	115	4.5	NEG	POS	NEG	ascites	
118	22.5	0.43	13.3	5.6	63	29	142	30	5.1	2	3.1	131	5.4	NEG	NEG	NEG	Ascites/ coagulopathy	
142	108.3	1.6	1	0.7	59	34	39	3	7	2.7	4.3	111.5	4.7	NEG	NEG	NEG	Ascites/ hepatic hydrothorax	
122	58	1.9	7	5	90	70	200	56	5.3	1.9	3.4	135	4.5	NEG	NEG	NEG	Ascites/ HE/ Coagulopathy	
94	53.1	2.4	2.8	1.6	99	37	352	92	6.5	2	4.5	141	2.4	NEG	NEG	NEG	Ascites/ coagulopathy/ HRS	
44	15	0.6	10.2	4.6	112	48	220	24	5.9	3	2.9	118	5.6	NEG	NEG	NEG	Ascites	
115	62	4.1	3.6	1.2	50	50	141	24	5.2	2.6	2.6	115	2.4	NEG	NEG	NEG	HE/ Coagulopathy/ Ascites	
88	27	0.7	6.2	4.5	352	141	295	34	5.1	2	3.1	122	4.4	NEG	NEG	NEG	Ascites/ Coagulopathy	
202	100.31	2.93	1.11	0.5	35	19	306	28	6.5	3	3.5	128.7	3.83	NEG	POS	NEG	HRS	
102	28.66	0.94	1	0.4	81	30	641	165	4	1.4	2.6	118.3	4.89	NEG	NEG	NEG	refractory ascites	
165	18	0.7	5.8	2.2	78	34	100	52	6	1.9	4.1	98	7	NEG	NEG	NEG	Bleeder	CAD
77	34.6	1.1	1.4	1.2	254	124	692	142	6.1	2.2	3.9	115	2.9	NEG	NEG	NEG	refractory ascites /ugi bleed	
124	143	1.18	0.7	0.2	76	60	237	4	4.4	2.4	2	151.2	4.98	NEG	NEG	NEG	refractory ascites /ugi bleed	
109	31.4	1.01	1.4	0.9	58	25	283	15	5	2.2	2.8	118	4.2	NEG	NEG	NEG	refractory ascites	
107	45.4	3.2	3.2	2.1	78	50	145	15	7.2	3.2	4	116	5.4	NEG	POS	NEG	refractory ascites	
134	25.65	1.34	0.5	0.2	166	50	231	24	4.8	2.5	2.3	135	4.4	NEG	POS	NEG	Ascites	
83	18	0.97	1.5	0.8	86	40	384	32	6.3	2	4.3	124	4.8	NEG	NEG	NEG	Ascites/ Coagulopathy	
432	27.99	0.7	5.2	3.2	64	38	310	30	6.6	2.8	3.8	110	2.4	NEG	NEG	NEG	SBP/ ascites/ coagulopathy	DM
88	15.12	0.46	3.1	1.9	71	33	71	14	7.7	3	4.7	128	3.6	NEG	NEG	NEG	Ascites/ Coagulopathy	
60	23.3	0.7	14.1	9.2	114	52	354	20	7.5	2.8	4.7	119	5.2	NEG	NEG	NEG	Ascites/ HE	
315	22.16	0.8	6.4	4.4	81	41	413	17	7.9	2.6	5.3	122	4.5	NEG	NEG	NEG	Ascites	DM
81	21.19	0.59	11.7	9.2	56	31	392	26	6.4	3.1	3.3	137.7	5.22	NEG	NEG	NEG	refractory ascites	
161	71	0.9	2.8	1	107	100	192	18	6	2.5	3.5	121	5.8	NEG	NEG	NEG	Ascites/ coagulopathy	
98	18	0.5	1.5	0.6	48	56	256	16	6.9	3.3	3.6	122	5.3	NEG	NEG	NEG	Recurrent bleed	
140	15	0.3	15.7	9.5	62	29	415	137	5.6	2	3.6	112	3.2	NEG	NEG	NEG	Refractory ascites/ recurrent GI Bleed	
91.7	76	2.9	7.7	6.2	302	88	341	46	5.3	2.1	3.2	110	4.9	NEG	POS	NEG	Refractory ascites/ HRS	
100	65	2.8	8.7	6.5	96	73	237	15	6.8	1.8	5	127	5.8	NEG	NEG	NEG	Refractory ascites	
74	127	2.6	23.3	18	210	106	541	353	6.3	2	4.3	114	5.2	NEG	POS	NEG	HRS/ Coagulopathy/ Ascites	DM
247	39.3	0.71	1.5	1	100	52	179	12	7.3	2.7	4.6	128	4.5	NEG	NEG	NEG	Ascites/ Coagulopathy	
112	68	2.1	1.1	0.6	217	67	617	28	6.1	3.1	2.6	114	4.8	NEG	NEG	NEG	HRS/ HE /Coagulopathy	
132	53	0.8	0.9	0.6	31	23	415	24	5.4	2.4	3	120	5.2	NEG	NEG	NEG	HE/SBP	
231	32	1	1	0.8	32	26	218	14	6.2	2.8	3.4	116	3.2	NEG	POS	NEG	Recurrent bleed	
121	26	0.9	4	2.4	121	86	256	32	5.6	2.4	3.2	116	4.5	NEG	NEG	NEG	Recurrent bleed	
111	49.62	1.4	7.8	6	42	24	178	24	5	2.1	2.9	129	4.4	NEG	NEG	NEG	Recurrent bleed	UTI
189	12.97	0.8	1.02	0.81	132	89	169	45	7.5	2.9	4.6	139	4.5	NEG	NEG	NEG	HE	DM
129	34	1	8	5	133	70	245	40	7.5	3	4.5	115	5.6	NEG	NEG	NEG	Recurrent bleed/ HE	
240	64	0.9	0.9	0.6	47	38	50	82	4.8	2.4	2.4	126	3.2	NEG	NEG	POS	Recurrent bleed	DM
111	58.3	1.1	5.2	2.1	302	88	181	12	6.3	1.4	4.9	120	4.2	NEG	NEG	NEG	Recurrent encephalopathy	DM
110	121	2.9	6.9	4	45	29	115	16	4.9	2	2.9	134	4.6	NEG	NEG	NEG	Refractory ascites/ UGI bleed	
156	54	1.3	29	23	88	64	212	36	4.8	2.1	2.7	116	4.8	NEG	NEG	NEG	HE	
66	112	6.4	28.4	20.3	84	66	256	110	7.1	2	5.1	110	3.2	NEG	NEG	NEG	HE/ Coagulopathy/ Ascites	
58	58	1.6	28	15.4	75	66	315	62	7	2.3	4.7	122	4.2	NEG	NEG	NEG	HE/ HRS/Coagulopathy	old PT
144	53.2	3.76	17.4	15.1	198	181	296	24	5.1	2	3.1	133	3.6	NEG	POS	NEG	HE/ HRS/Coagulopathy	
68	49	1.9	28	25	109	182	260	12	4.8	2	2.8	124	1.6	NEG	NEG	NEG	HE/ Coagulopathy/ Ascites	BA
98	75	2	10.6	8.4	92	56	254	12	5.2	2	3.2	122	3.6	NEG	NEG	NEG	HRS/ UGI bleed	
78	72	1.3	9.6	5.4	117	98	312	62	7.2	2.4	4.8	134	4.2	NEG	POS	NEG	HE	
93	40.12	0.17	18.7	16.6	100	71	534	180	4.9	2.2	2.7	126	5.4	NEG	NEG	NEG	HE	PT
75	56	1.4	16.2	12	152	76	258	46	5.2	2.2	3	118	4.5	NEG	NEG	NEG	Refractory ascites	
147	96.76	2.18	3	1.1	71	24	189	9	5.2	1	4.2	134.7	5.38	NEG	NEG	POS	HE/ Coagulopathy/ hydrothorax	

Serial No	Name	Age	Sex	Diagnosis	Duration of disease	Cause of admission	Hepatic complications	Non hepatic complications	Child's	MELD	MELD Na	DF	socioeconomic	platelet	TC	NEUTROPHILLS	DC	Hemoglobin
1	Kali	48	1	HBV related DCLD	6 month	UGI bleed	2	0	A	16	25	44	Lower	94,000	6,600	59	59/31/10	10.9
2	Kumaresan	41	1	Ethanol related DCLD	5 month	SBP/ HRS	2	0	B	11	15	6	Lower	205,000	17,300	70	70/22/08	5.7
3	Kulothunga	34	1	Cryptogenic DCLD	36 months	HE	3	2	B	18	22	50	Lower	170,000	1,600	66	66/27/07	7.8
4	Rajendran	50	1	Ethanol related DCLD	6 month	HE	1	0	B	28	32	114	middle	100,000	9,000	68	68/28/4	9
5	Narayanan	36	1	Ethanol related DCLD	24 months	HRS	3	0	C	27	28	61	middle	78,000	4,200	58	58/41/1	9.7
6	Barkatullah	35	1	Ethanol related DCLD	12 months	HRS	3	0	C	18	26	24	Lower	562,000	9,800	64	64/31/5	6.5
7	Ganesan	37	1	Ethanol related DCLD	12 months	HE	2	0	C	23	28	85	Lower	69,000	7,300	78	78/19/3	9.8
8	Kannan	36	1	Cryptogenic DCLD	48 months	HE	2	0	B	12	23	25	Lower	50,000	3,000	62	62/31/7	11.1
9	Shanmugar	58	1	Ethanol related DCLD	9 month	HE	1	1	B	15	21	37	middle	200,000	9,500	78	78/12/10	9.9
10	Manipallav	51	1	Ethanol related DCLD	6 month	HE	2	0	C	15	24	32	Lower	62,000	6,100	57	57/38/1	8.7
11	Kailasam	49	1	Ethanol related DCLD	6 month	HE	1	0	B	18	26	12	Lower	120,000	8,700	64	64/33/3	11.2
12	Abu bakkar	43	1	Ethanol related DCLD	12 months	Cellulitis leg	1	1	B	25	29	56	middle	113,000	27,800	86	86/06/08	7.8
13	Aravind	42	1	Ethanol related DCLD	12 months	HE	4	0	C	19	25	63	middle	150,000	5,900	69	69/39/2	5.5
14	Durairaj	55	1	Ethanol related DCLD	6 month	HRS	2	0	C	27	32	60	Lower	153,000	10,900	87	87/8/5	6.88
15	Ramakrishr	34	1	HBV & Ethanol related DCLD	6 month	Cellulitis leg	1	1	B	17	22	19	middle	45,000	17,700	79	79/12/9	10.2
16	Valluvamar	46	1	Ethanol related DCLD	12 months	refractory ascites/ H. encephal	2	0	B	14	21	79	middle	120,000	6800	66	66/32/2	10.2
17	Pandian	32	1	Ethanol related DCLD	6 month	SBP	3	0	C	27	31	76	Lower	110,000	9,800	80	80/16/4	9
18	Krishnamo	27	1	Ethanol related DCLD	6 month	HE	2	0	B	19	27	44	middle	183,000	13,000	80	80/10/10	8.9
19	Murali	41	1	Ethanol related DCLD	12 months	HE	3	0	C	24	30	72	middle	95,000	12,600	78	78/13/9	7.3
20	Ganesan	37	1	Ethanol related DCLD	6 month	SBP	3	0	B	18	19	21	Lower	92,000	5,900	69	69/21/10	6.5
21	Periyasami	48	1	Ethanol related DCLD	18 months	HE	2	1	B	17	24	29	Lower	90,000	7,000	84	84/6/10	8.6
22	Purushotta	45	1	Ethanol related DCLD	6 month	UGI bleed	2	0	B	23	26	37	middle	178,000	13,000	85	85/10/05	10.6
23	Balaji	18	1	Wilson disease	24 months	HE	1	0	B	19	22	37	Lower	120,000	10,200	70	70/30	9
24	Etheraj	49	1	HBV related DCLD	6 month	HE	2	0	B	16	20	22	Lower	77,000	7,300	60	60/25/14	9.6
25	Sakthi Vel	43	1	Cryptogenic DCLD	24 months	HE	2	1	B	16	18	15	middle	81,000	3,200	68	68/23/9	6.4
26	Mani	42	1	Ethanol related DCLD	12 months	UGI bleed	1	0	A	18	18	14	middle	180,000	5,500	65	65/20/10	7.4
27	Parimala	60	2	HBV related DCLD	6 month	UGI bleed	1	1	A	9	18	20	Lower	255,000	6,900	67	67/20/13	9.2
28	Padmanabl	62	1	Ethanol related DCLD	24 months	HE	2	0	C	18	20	49	Lower	106,000	10,300	84	84/7/9	7.5
29	Kumar	25	1	Ethanol related DCLD	3 months	UGI bleed	3	0	B	26	31	73	Lower	85,000	11,900	80	80/14/6	11.4
30	Kasthuri	56	2	Cryptogenic DCLD	12 months	HE	1	0	C	12	23	33	middle	207,000	4,200	58	58/35/7	7.3
31	Selvam	30	1	Ethanol related DCLD	24 months	Sepsis	1	1	B	27	30	109	Lower	65,000	11,900	64	64/30/6	4
32	Dhanapaul	60	1	Ethanol related DCLD	36 months	UGI bleed	1	0	A	13	16	15	Lower	192,000	8,400	69	69/26/5	14
33	Jothi	55	1	HBV & Ethanol related DCLD	6 month	UGI bleed	1	0	A	8	8	15	Lower	57,000	2,500	57	57/33/20	10.5
34	Kathija Bee	73	2	NAFLD related DCLD	6 month	HE	2	0	C	19	27	45	Lower	34,000	5,100	50	50/40/10	7.2
35	Venkatesar	50	1	Ethanol related DCLD	6 month	HRS	1	1	B	25	31	29	middle	317,000	8,400	66	66/24/10	7.4
36	Anthony Da	40	1	Ethanol related DCLD	12 months	HE	2	0	B	12	23	15	Lower	43,000	13	77	77/13/10	11
37	Murugan	45	1	Ethanol related DCLD	12 months	HE	1	1	B	11	22	19	Lower	75,000	8,000	83	83/09/08	4.8
38	Vijayan	44	1	Ethanol related DCLD	6 month	HE	1	0	B	14	20	25	Lower	292,000	10,100	72	72/18/10	6.6
39	Venkata Su	56	1	NAFLD related DCLD	6 month	HRS	3	1	C	26	31	51	Lower	77,000	15,600	82	82/12/6	6.3
40	Selva Pand	45	1	Ethanol related DCLD	6 month	HRS	4	1	C	28	32	73	middle	78,000	14,400	73	73/17/10	5.9
41	Venkatesh	45	1	Ethanol related DCLD	48 months	SBP	3	1	C	19	27	31	Lower	76,000	3,900	68	68/23/9	6.6
42	Sekar	50	1	Ethanol related DCLD	12 months	HE	2	0	B	19	27	69	middle	79,000	3,700	50	50/30/10	7.6
43	Puniyakoti	55	1	HCV & Ethanol related DCLD	6 month	HE	2	1	C	20	22	49	Lower	25,000	3,300	75	75/15/10	8.5
44	Sundaram	61	1	Cryptogenic DCLD	6 month	HE	2	1	B	11	22	7	middle	93,000	9,200	81	81/9/10	10.18
45	Annadurai	50	1	Cryptogenic DCLD	24 months	UGI bleed	1	1	A	10	10	11	middle	57,000	6,500	70	70/28/2	10.3
46	George Fer	13	1	Wilson disease	36 months	SBP	3	0	B	19	19	55	Lower	65,000	6,800	82	82/12/3	11
47	Anand	60	1	Ethanol related DCLD	6 month	UGI bleed	2	0	A	9	20	7	Lower	58,000	3,600	86	86/13/1	6.3
48	Rama Subr	46	1	Cryptogenic DCLD	36 months	Refractory Ascites	2	0	B	14	22	31	middle	70,000	4,000	63	63/34/3	12.8
49	Ramamoor	63	1	HBV related DCLD	6 month	HE	1	0	B	18	26	55	Lower	110,000	9,800	64	64/32/4	11.4
50	Venkatesar	40	1	Ethanol related DCLD	24 months	HE	2	0	B	18	26	30	Lower	42,000	6,400	72	72/18/10	6.1
51	Kotti	55	1	Ethanol related DCLD	12 months	HE	1	0	B	23	29	35	Lower	138,000	8,600	42	42/48/10	10.3
52	Ravi	44	1	Ethanol related DCLD	6 month	HRS	2	0	B	34	35	69	Lower	80,000	4,500	70	70/20/10	9.78
53	Aravind	53	1	Ethanol related DCLD	12 months	SBP	2	0	C	23	29	86	Lower	176,000	11	80	80/10/10	7
54	Bala Nagar	64	1	HCV related DCLD/ PHT	12 months	HE	1	0	B	12	14	34	middle	18,000	2,100	60	60/30/10	7.4
55	Rajendran	45	1	Ethanol related DCLD	6 month	HE	1	0	C	20	20	75	Lower	170,000	7,300	74	74/9/9	12.2
56	Parthasara	44	1	Ethanol related DCLD	12 months	HE	2	0	C	21	22	84	Lower	36,000	4,000	60	60/32/8	11.2
57	Murugesan	58	1	Ethanol related DCLD	6 month	HRS	2	1	B	11	14	16	middle	218,000	14,800	79	79/14/6	10.3
58	Fathima Be	17	2	Cryptogenic DCLD	6 month	HE	2	0	B	12	14	9	Lower	573,000	13,200	65	65/28/07	7.9
59	Krishnamo	47	1	Ethanol related DCLD	6 month	SBP	2	0	C	20	28	42	middle	57,000	1,700	80	80/19/1	9
60	Pushparaj	45	1	HBV related DCLD	12 months	HE	2	0	B	15	19	39	Lower	110,000	3,900	60	60/30/10	5.5
61	Gurusamy	45	1	Ethanol related DCLD	12 months	HRS	3	0	C	23	29	38	Lower	120,000	5,300	70	70/26/4	7.5
62	Selvam	45	1	Ethanol related DCLD	6 month	HRS	1	0	C	27	32	33	middle	50,000	8,000	75	75/15/10	11
63	Guna Sekar	35	1	Ethanol related DCLD	6 month	HE	2	0	C	23	26	71	middle	160,000	18,100	80	80/10/10	6.8
64	Balanagara	64	1	HCV related DCLD/ PHT	18 months	SBP	1	0	B	16	21	44	Lower	17,000	4,800	84	84/08/08	8.2
65	Venkatesh	44	1	Ethanol related DCLD	12 months	HE	2	1	C	27	29	121	Lower	97,000	4,600	45	45/45/10	6.7
66	Manisekara	45	1	Ethanol related DCLD	6 month	SBP	2	0	B	17	26	45	middle	75,000	9,700	70	70/20/10	9.6
67	Alagu Sund	32	1	Ethanol related DCLD	6 month	UGI bleed	1	0	B	15	24	31	Lower	90,000	6,500	67	67/8/10	6.7
68	Damodhara	70	1	HCV related DCLD/ PHT	6 month	UGI bleed	1	1	A	7	7	15	Lower	39,000	2,400	61	61/32/07	10
69	Ramesh Ch	44	1	Ethanol related DCLD	18 months	HE	3	0	C	19	24	40	middle	171,000	6,700	60	60/31/9	10.9
70	Murali	32	1	Ethanol related DCLD	6 month	HE	3	1	C	18	19	47	middle	221,000	31,100	74	74/18/08	9.1

ESR	APTT	PT	INR	Sugar	Urea	Creat	T. Bil	D.Bil	SGOT	SGPT	SAP	GGT	T.Protein	Albumin	Globulin	Sodium	Potassium	HIV	HBsAg	Anti HCV	HE	HRS	Coag	refractory a	SBP	Bleed	Others
16	34	22	1.6	134	33.4	0.65	3	2.1	123	103	116	22	6.4	2	4.4	120	5	NEG	POS	NEG	No	No	Yes	No		Yes	
66	26	14	1	158	108.15	1.66	1	0.6	70	48	120	36	5.8	2	3.8	133.8	3.64	NEG	NEG	NEG							
82	26	23	1.7	210	16.53	0.6	4.3	2.5	57	37	496	47	5.5	2.1	3.4	132	5.2	NEG	NEG	NEG	Yes	No	Yes	No	No	Yes	DM/CAD
20	36	34	2.6	110	26	0.6	17.8	8.1	42	19	146	140	6.1	2	4.1	125.2	4.33	NEG	NEG	NEG							
22	75	25.7	2.4	112	47	2.2	2.6	1.5	87	84	119	76	8.2	4	4.2	137	3.8	NEG	NEG	NEG	No	Yes	Yes	No	No	Yes	
120	29	16	1.3	77	21.92	0.73	10.6	7.3	79	38	549	139	6.3	2.2	4.1	122	5.2	NEG	NEG	NEG	Yes	Yes	No	No	No	Yes	
42	34	30	2.3	120	46.5	0.92	6.9	4.2	85	35	203	15	4.9	2	2.9	128	4.4	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
14	26	18	1.2	105	11	1.2	1.7	0.6	50	17	143	38	6.7	2.6	4.1	124	3.6	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
12	32	19	1	227	14.53	0.41	9.2	6.7	132	38	782	700	4.3	2.3	2	130	4.2	NEG	NEG	NEG	Yes	No	No	No	No	No	DM
15	30	19	1.3	138	20.2	0.49	4.6	2.8	52	25	326	18	5.9	2.9	3	119	5.2	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
12	30	12	1.2	96	25.02	0.5	12.35	9.3	171	71	358	42	6.1	2.2	3.9	122.2	5.73	NEG	NEG	NEG							
62	32	24	1.7	107	80	1.89	5.2	3.4	87	39	174	20	6.2	2	4.2	130.6	4.52	NEG	NEG	NEG							
20	56.3	26	1.6	94	45	1.5	2.7	1.5	76	60	225	40	5.5	3.2	3.3	128	4.2	NEG	NEG	NEG	Yes	Yes	Yes	No	No	Yes	
20	32	23	1.7	95	25.8	1.7	13.5	10.5	161	146	364	18	6.5	2	4.5	120.2	5.4	NEG	NEG	NEG	No	Yes	Yes	No	No	No	
98	26	14	1	49	41.3	0.34	14.5	11.2	117	46	361	68	4.8	1.8	3	132	5.4	NEG	POS	NEG	No	No	No	No	No	No	cellulitis leg
12	28	30	1.9	162	18	0.7	1		80	56	187	24	5.8	3.6	2.2	130	4.9	NEG	NEG	NEG							
56	36	20	1.8	132	42	0.8	44	42	186	62	390	46	5.7	2.5	3.2	128	5.4	NEG	NEG	NEG	Yes	No	Yes	No	Yes	No	
12	30	20	1.4	144	18.8	0.6	11.4	8.7	155	55	199	24	5.1	2	3.1	122.4	4.6	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
18	36	26	2	168	60.3	0.77	12.6	10.4	11	12	420	74	4.3	2	2.3	110	4.2	NEG	NEG	NEG	Yes	No	Yes	No	No	Yes	
80	28	16	1.3	85	63.75	1.16	7	5.8	78	38	182	17	5.3	2	3.3	138.2	4.3	NEG	NEG	NEG	Yes	No	No	No	Yes	Yes	
14	28	17	1.2	133	37.18	0.72	10.1	7.6	137	69	366	243	4.4	2	2.4	128	3.6	NEG	NEG	NEG	Yes	No	No	No	No	Yes	old PT
15	34	19	1.4	97	49.2	1.6	9.7	7.5	76	70	130	138	6.9	2.6	4.3	132	4.2	NEG	NEG	NEG	No	Yes	No	No	No	Yes	
12	28	19	1.4	97	27	0.4	9.4	5.6	170	127	314	49	6	2.4	3.6	134	2.8	NEG	NEG	NEG	Yes	No	No	No	No	No	
28	28	17	1.6	110	15.4	0.9	3.3	2	84	39	236	18	5.7	2.1	3.6	133	4	NEG	POS	NEG	Yes	No	Yes	No	No	No	
80	28	16	1.4	122	32.5	1.8	1	0.5	43	20	130	14	4.7	2.3	2.4	136	4.8	NEG	NEG	NEG	Yes	Yes	No	No	No	No	Obesity
12	28	15	1.2	84	22.9	1.34	5.2	3.6	48	42	156	14	5.5	2.2	3.3	142	4.5	NEG	NEG	NEG	No	No	No	No	No	Yes	
12	28	17	1.2	286	10.33	0.63	1.25	0.66	69	37	209	80	6.7	2	4.7	129	4.5	NEG	POS	NEG	No	No	No	No	No	Yes	DM
36	30	23	1.8	88	54.4	1.04	3.4	2.1	81	26	97	24	5.3	2	3.3	136	3.2	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
18	30	23	1.7	65	56.6	1.09	26.9	24.6	166	68	405	73	6.5	2.8	3.7	116	3.2	NEG	NEG	NEG	Yes	No	Yes	No	No	Yes	
16	32	20	1.4	121	48	1.2	1	0.8	52	32	456	22	5.6	2	3.6	110	4.6	NEG	NEG	NEG	Yes	No	No	No	No	No	
84	42	35	2.6	109	36.3	1.2	7.7	5.2	52	24	197	21	5.7	2	3.7	132	4.5	NEG	NEG	NEG	No	No	Yes	No	No	No	cellulitis leg
8	28	16	1.2	100	37.11	1.41	1.24	0.69	79	22	238	278	5.6	2	3.6	135	3.6	NEG	NEG	NEG	No	No	No	No	No	Yes	
16	26	16	1.1	74	18.7	0.48	1.2	1	85	92	254	23	4.7	2.2	2.5	140	4.4	NEG	POS	NEG	No	No	No	No	No	Yes	
16	30	21	1.5	101	29	1	8.1	6.7	73	59	287	39	7.2	3.3	3.9	110	2.8	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
56	32	19	1.3	211	66.49	3.2	3.2	2	24	12	433	133	6.7	2.7	4	120	2.8	NEG	NEG	NEG	No	Yes	No	No	No	No	DM
14	28	16	1.2	88	53.8	1.31	1.2	0.6	91	34	194	170	7.2	2.6	4.6	124	5.2	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
128	30	17	1.4	195	25.53	1.06	0.59	0.3	38	27	171	49	5.9	1.7	4.2	118	4.6	NEG	NEG	NEG	Yes	No	No	No	No	No	DM
28	32	18	1.3	93	50.4	1.39	1.5	0.9	87	67	281	84	5.2	2	3.2	131	5.4	NEG	NEG	NEG	Yes	No	No	No	No	No	
110	34	23	1.7	228	70.8	2.1	5.42	3.8	43	36	184	58	5.4	1.7	3.7	125	5.2	NEG	NEG	NEG	No	Yes	Yes	No	No	Yes	DM
80	38	28	2.1	199	51.74	2.19	4.2	2.5	26	12	220	26	4.8	2	2.8	128	2.74	NEG	NEG	NEG	Yes	Yes	Yes	No	No	Yes	DM
74	26	26	1.9	282	57.07	0.63	3.7	1.5	46	18	153	23	4	1.1	2.9	119	4.6	NEG	NEG	NEG	No	No	Yes	No	Yes	Yes	DM
42	34	27	1.9	88	13.22	0.9	4.12	3.64	72	46	267	17	7.1	2.4	4.7	116	3.4	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
54	33	22	1.7	217	47	0.8	7.7	5.6	51	34	273	29	5.6	2.3	3.3	136	3.4	NEG	NEG	POS	Yes	No	Yes	No	No	No	DM
22	26	14	1	278	74	1.15	2.1	1.4	41	28	289	18	8.1	2.3	5.8	124	5.2	NEG	NEG	NEG	Yes	No	No	No	No	Yes	DM
15	28	15	1.1	155	18.5	0.54	1.7	1.3	37	31	286	18	6.3	2.6	3.7	142	3.6	NEG	NEG	NEG	No	No	No	No	No	Yes	DM
12	36	24	1.8	109	23.72	0.81	4.4	2.1	206	79	714	69	6.3	2.5	3.8	140	3.5	NEG	NEG	NEG	Yes	No	Yes	No	Yes	No	
24	28	14	1	129	17	0.8	2.1	1	31	11	169	4	5.1	2.6	2.5	126	4.2	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
36	32	19	1.4	84	16	1	3	0.5	122	59	184	43	5.4	2.5	2.9	127	4.6	NEG	NEG	NEG	Yes	No	No	Yes	No	No	
12	34	24	1.7	82	22.09	0.47	4.5	2	76	66	589	469	6.9	3.2	3.7	126.2	4.4	NEG	POS	NEG							
20	26	18	1.4	85	29.4	0.9	7.1	5.8	93	25	278	253	5.3	2	3.3	118	4.6	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
15	26	18	1.3	44	24.8	1.5	12.12	10.76	62	26	395	45	6.5	2.5	4	119	2.8	NEG	NEG	NEG	Yes	No	No	No	No	No	
40	36	26	1.9	78	84	3.5	9.4	6.22	90	50	172	90	7	2	5	134	4.5	NEG	NEG	NEG	No	Yes	Yes	No	No	No	
62	38	30	2.2	144	39.6	0.4	7.6	3.1	50	10	287	32	7.6	2.4	5.2	123	2.1	NEG	NEG	NEG	No	No	Yes	No	Yes	No	
32	32	20	1.4	104	32.37	0.82	1.8	1	600	330	129	84	5.9	2.2	3.7	137.6	3.62	NEG	NEG	NEG	Yes	No	No	No	No	No	
30	38	26	1.3	77	35	1	15.1	11	23	50	628	175	6	2.6	3.4	142	4.6	NEG	NEG	NEG	Yes	No	No	No	No	No	
40	32	30	2.1	115	13.8	0.62	5.8	3.3	65	22	227	25	8.4	2.4	6	138.3	3.79	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
100	28	16	1.2	228	112.28	1.8	1.9	1.5	180	47	700	183	7.5	2.3	5.2	136	4.2	NEG	NEG	NEG	No	Yes	No	No	No	Yes	DM
40	26	14	1	84	25.23	0.54	4	2	27	11	157	15	6.1	3.8	2.3	137.7	3.3	NEG	NEG	NEG	Yes	No	No	No	No	Yes	
24	30	19	1.4	60	23.3	0.7	14.1	9.2	114	52	354	30	7.5	2.8	4.7	118	4.8	NEG	NEG	NEG	Yes	No	No	No	Yes	No	
28	32	21	1.6	68	13.97	0.8	2.2	1.3	37	17	395	40	4.7	1.7	4	133.3	4.33	NEG	POS	NEG	Yes	No	Yes	No	No	No	
31	24	19	1.4	113	41.5	1.83	6.9	4	42	26	169	14	7.1	2.9	4.2	123	5	NEG	NEG	NEG	Yes	Yes	No	No	No	Yes	
72	30	19	1.2	95	80	3.5	5.1	3.9	42	39	482	34	7.1	2.5	5.6	118	3.2	NEG	NEG	NEG	No	Yes	No	No	No	No	
42	34	26	1.8	64	76	1.1	10.9	7.8	167	81	285	32	3.7	2.1	1.6	132	5.2	NEG	NEG	NEG	Yes	No	Yes	No	No	No	
52	34	22	1.6	170	40.69	1.2	2.2	1	21	17	86	6	6.2	2.6	3.6	132	4.24	NEG	NEG	POS							
96	40	39	2.9	113	13.91	0.8	10.7	6.8	36	14	260	154	5.1	2	3.1	134.3	4.5	NEG	NEG	NEG	Yes	No	Yes	No	No	No	DM
42	32	22	1.6	150	24.2	0.8	3.8	2.4	85	69	153	42	7.7	2	3.7	120	3.6	NEG	NEG	NEG	No	No	Yes	No	Yes	No	
32	34	19	1.4	73	12.74	0.84	3.4	1.76	101	43	197	41	5.6	2	3.6	115	4.2	NEG	NEG	NEG	No	No	No	No	No	Yes	
42	28	16	1.1	99	23.35	0.67	0.76	0.52	74	54	161	21	6.5	3.1	3.4	141.7	4.92	NEG	NEG	POS	No	No	No	No	No	Yes	old PT
15	42	20.6	1.6	78	22	1.1	4.9	3.4	27	18	252	54	5.6	2.8	2.8	130.5	5.32	NEG	NEG	NEG	Yes	No	Yes	No	No	Yes	
48	34	22	1.6	144	16.11	0.65	5.2	3	65	21	340	205	5.4	2	3.4	139	4.37	NEG	NEG	NEG	Yes	No	Yes	No	No	Yes	Seizure

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